

# 1364 E. Green Street

Final Local Mobility Analysis Report

Prepared for:  
**City of Pasadena**

Submitted on:  
**December 4, 2025**



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# 1. Introduction

This report summarizes the results of a transportation analysis for the proposed Research and Development building located at 1364 E. Green Street (Project) in the City of Pasadena and provides detailed information on the existing and future transportation conditions in the vicinity of the project site. Seven (7) existing intersections in the vicinity of the project site were analyzed. Additionally, an Active Transportation Review was prepared to identify potential effects of the proposed project on the bicycle, pedestrian, and transit network. This report has been prepared based on requirements within the City of Pasadena Transportation Impact Analysis Guidelines (April 2022).

## 1.1 Project Description

The Project site is located at 1364 E. Green Street and is currently improved with 115 stalls of existing surface parking spanning all 3 parcels. The proposed project will be a 4-story Research and Development building, with Lab/Office spaces on the ground level, a terrace on the top occupiable floor, along with 3 subterranean levels of parking. Vehicle access to the parking garage will be provided via an inbound driveway on Holliston Avenue, on the west side of the site, and an outbound driveway on Green Street, on the north side of the site. The main pedestrian access to the building will be located along Green Street. **Figure 1** shows the project site plan.

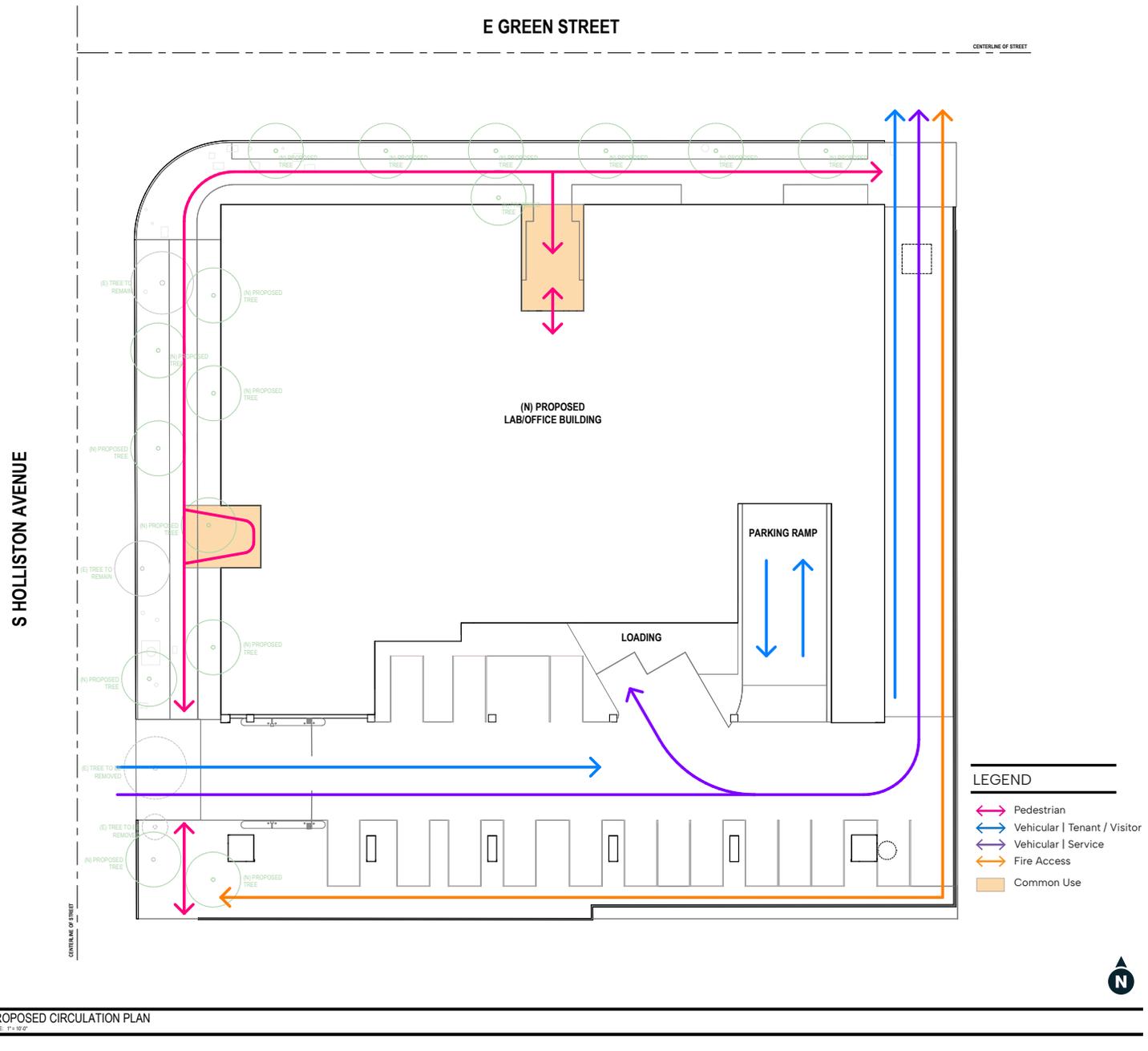


FIGURE 1

# Project Site Plan

## 2. Existing Transportation Network

This section describes the roadway system and transit service in the vicinity of the Project. The existing configurations of the transportation network within the study area are described below.

### 2.1 Existing Street System

Colorado Boulevard, oriented in an east–west direction, is designated as a City Connector. The roadway consists of two lanes in each direction with a painted median within the study area. The roadway has a posted speed limit of 30 mph and on–street parking is provided.

Green Street, oriented in an east–west direction, is designated as a City Connector. The roadway is a one–way street in the eastbound direction that consists of three lanes. The roadway has a posted speed limit of 30 mph and on–street parking is provided.

Cordova Street, oriented in an east–west direction, is designated as a Neighborhood Connector. The roadway consists of one lane in each direction with a center two–way left–turn lane and a Class II bicycle lane. The roadway has a posted speed limit of 35 mph and on–street parking is provided.

Del Mar Boulevard, oriented in an east–west direction, is designated as a City Connector. The roadway consists of two lanes in each direction. The roadway has a posted speed limit of 35 mph and on–street parking is provided.

Wilson Avenue, oriented in a north–south direction, is designated as a Neighborhood Connector. The roadway consists of one lane in each direction, with a Class II bicycle lane. The roadway has a posted speed limit of 25 mph and on–street parking is provided.

Michigan Avenue, oriented in a north–south direction, is designated as an Access roadway. The roadway consists of one lane in each direction and has an offset configuration at Colorado Boulevard. On–street parking is provided on the west side of the street north of Colorado Boulevard and both sides of the street south of Colorado Boulevard. The roadway has a posted speed limit of 25 mph.

Chester Avenue, oriented in a north–south direction, is designated as an Access roadway. The roadway consists of one lane in each direction and has an offset configuration at Colorado Boulevard. The roadway has a posted speed limit of 25 mph and on–street parking is provided.

Holliston Avenue, oriented in a north–south direction, is designated as an Access roadway. The roadway consists of one lane in each direction. On–street parking is provided on the west side of the street except between Colorado Boulevard and Green Street where parking is on the east side of the street. The roadway has a posted speed limit of 25 mph.

Hill Avenue, oriented in a north–south direction, is designated as a City Connector within the study area. The roadway consists of two lanes in each direction in the study area. The roadway has a posted speed limit of 30 mph and on–street parking is generally provided on both sides of the street.

**Figure 2** shows the existing street network and classifications in the study area.

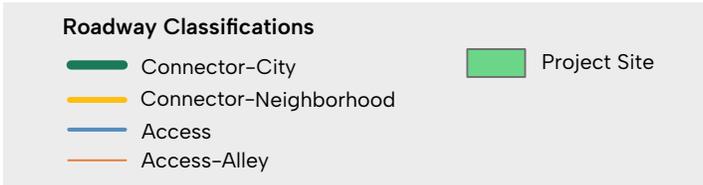
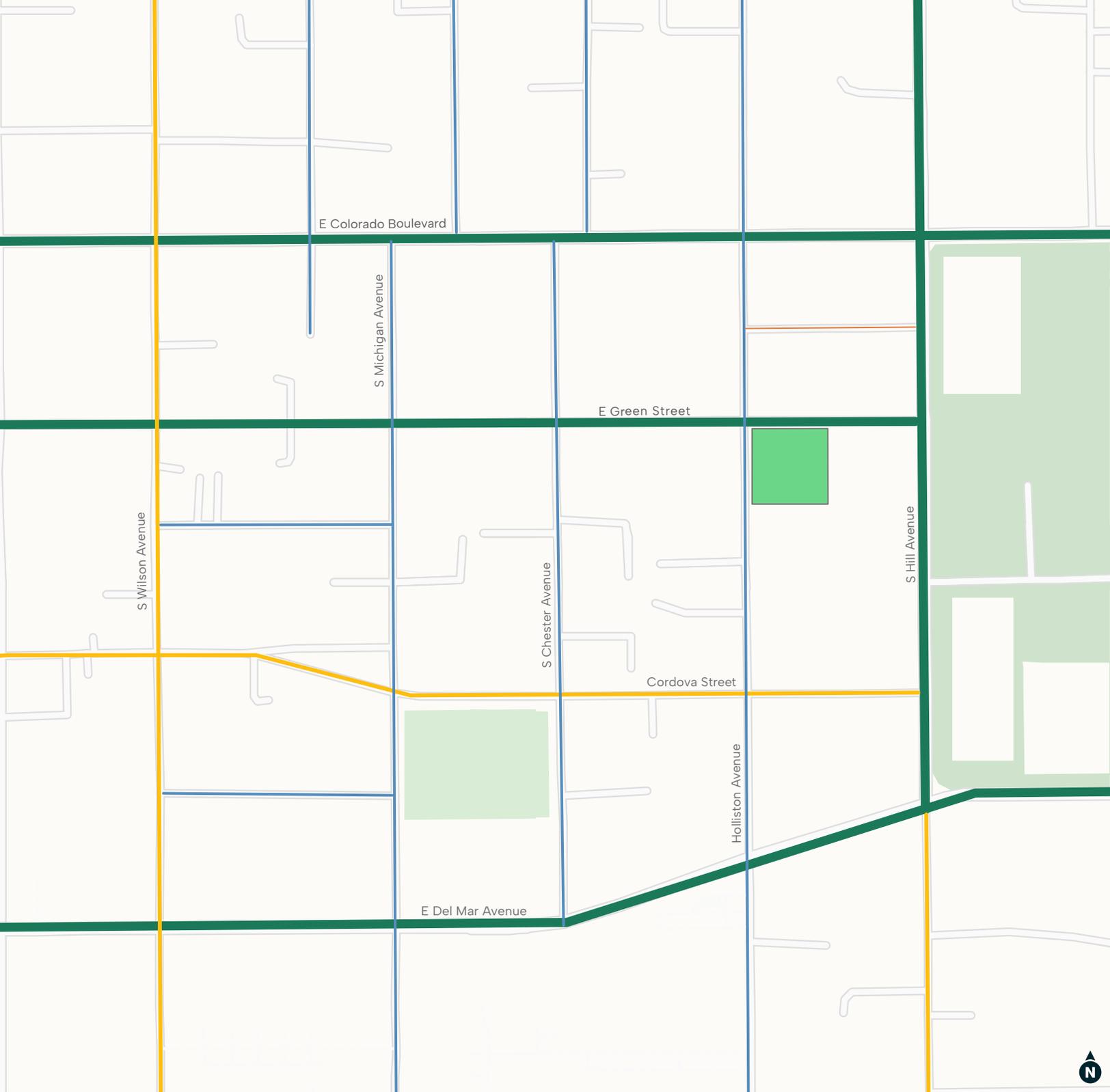


FIGURE 2

# Roadway Classifications

## 2.2 Existing Transit Service

LA Metro, Pasadena Transit and Foothill Transit provide transit services in the study area. The bus stop locations, per line, are summarized in **Table 1**.

**Table 1. Existing Transit Service Stop Locations**

Location	LA Metro Route	Foothill Transit	Pasadena Transit
Colorado Blvd / Hill Ave			
Northwest corner	180	187	None
	267		
Southeast corner	180	None	None
	267		
Del Mar Blvd / Hill Ave			
Northwest corner	267	None	10
Southwest corner	267	None	10

Source: Fehr & Peers.

### 3. Proposed Project Traffic

This section describes the methodology used to determine Project-related trip generation. The first step in analyzing traffic conditions with the Project is to estimate the number of new trips expected to be generated by the Project. The proposed Project consists of a 4-story Research and Development building, with laboratory and office space, and three (3) subterranean levels of parking.

Trip generation estimates for the Project were developed using rates contained in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11<sup>th</sup> Edition*. The trip generation estimates are shown in **Table 2**. As shown in **Table 2**, the proposed Project is estimated to generate a total of 1,036 daily vehicle trips, with 96 vehicle trips in the AM peak hour (79 in, 17 out) and 92 vehicle trips in the PM peak hour (15 in, 77 out).

**Table 2. Project Trip Generation Estimates**

Land Use	ITE Land Use Code	Size	Daily Rate	Trip Generation Rates [a]						Daily Trips	Estimated Trip Generation					
				AM Peak Hour			PM Peak Hour				AM Peak Hour Trips			PM Peak Hour Trips		
				Rate	In %	Out %	Rate	In%	Out %		In	Out	Total	In	Out	Total
Research & Development Center	760	93.54 KSF	11.08	1.03	82%	18%	0.98	16%	84%	1,036	79	17	96	15	77	92
<i>Total External Vehicle Trips</i>									<i>1,036</i>	<i>79</i>	<i>17</i>	<i>96</i>	<i>15</i>	<i>77</i>	<i>92</i>	
<b>Net Incremental External Trips</b>									<b>1,036</b>	<b>79</b>	<b>17</b>	<b>96</b>	<b>15</b>	<b>77</b>	<b>92</b>	

[a] Source: Institute of Transportation Engineers (ITE), Trip Generation, 11th Edition, 2021. All rates are Peak Hour of Adjacent Street Traffic

# 4. Intersection Operational Analysis

This section summarizes the operational analysis of intersections in the study area. This section includes a discussion of the analysis methodologies and thresholds used in the transportation analysis and summarizes existing and future traffic operations with and without the proposed Project.

## 4.1 Analysis Methodology

The quality of traffic operations is characterized using the concept of Level of Service (LOS). LOS is defined by a range of grades from A (best) to F (worst). At intersections, LOS A represents relatively free flow operating conditions with little or no delay. LOS F is characterized by extremely unstable flow conditions, severe congestion, and delay, with traffic volumes at or near an intersection’s design capacity. This typically results in long vehicular queues extending from all approaches of an intersection.

Per the City’s guidelines, LOS analysis is performed using the Highway Capacity Manual (HCM) methodology, which uses vehicular delay criteria to determine LOS. **Table 3** presents a brief description of each Level of Service letter grade (Source: Highway Capacity Manual, 7<sup>th</sup> Edition (2022)).

**Table 3. Intersection Level of Service Definitions – HCM Methodology**

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	≤10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	>10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	>20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	>35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor vehicle progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	>55.0 to 80.0
F	This level is considered oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	>80.0

## 4.1.1 Intersection Thresholds of Significance / Caps

The City of Pasadena has established the following thresholds/caps for intersection LOS, as shown in **Table 4**.

**Table 4. Intersection Level of Service Significance Thresholds / Caps**

Study Intersections	Existing Plus Project LOS Cap
Citywide	D
Transit Oriented District (TOD)	E

Note that the proposed Project is not located within a Transit Oriented District.

## 4.2 Study Area, Analysis Scenarios, and Existing Volumes

The study area for analysis includes the following seven signalized (7) intersections in the vicinity of the Project site:

1. Wilson Avenue & Green Street
2. Holliston Avenue & Colorado Boulevard
3. Hill Avenue & Colorado Boulevard
4. Holliston Avenue & Green Street
5. Hill Avenue & Green Street / Pasadena City College Driveway
6. Hill Avenue & Cordova Street / Pasadena City College Driveway
7. Hill Avenue & Del Mar Boulevard

The Project location and study intersections are shown in **Figure 3**.

Traffic operations were evaluated for each of the following scenarios during the weekday morning (7:00 – 9:00AM) and evening (4:00 – 6:00PM) peak periods during typical weekday conditions while school was in session:

- Existing Conditions (2025)
- Existing Plus Project Conditions (2025)
- Future Baseline Conditions (2027)
- Future Plus Project Conditions (2027)

Additionally, an off-site queuing analysis was performed for the Future Baseline Conditions (2027) and Future Plus Project Conditions (2027) scenarios to assess queue formation in exclusive turn lanes at the study intersections.

### 4.2.1 Existing Traffic Volumes

Existing traffic counts at the study intersections were collected in May and June 2025. All counts were conducted during the morning peak period (7:00 – 9:00AM) and evening peak period (4:00 – 6:00PM). The traffic operations analysis is based on the highest single hour of traffic during each time period at each location. Detailed vehicle turning movement data is included in **Appendix A**. **Figure 4** shows the existing peak hour volumes and lane configurations at the study intersections.

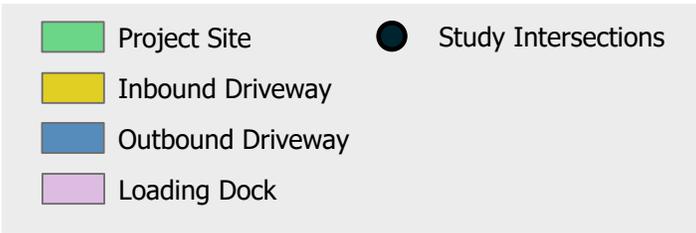
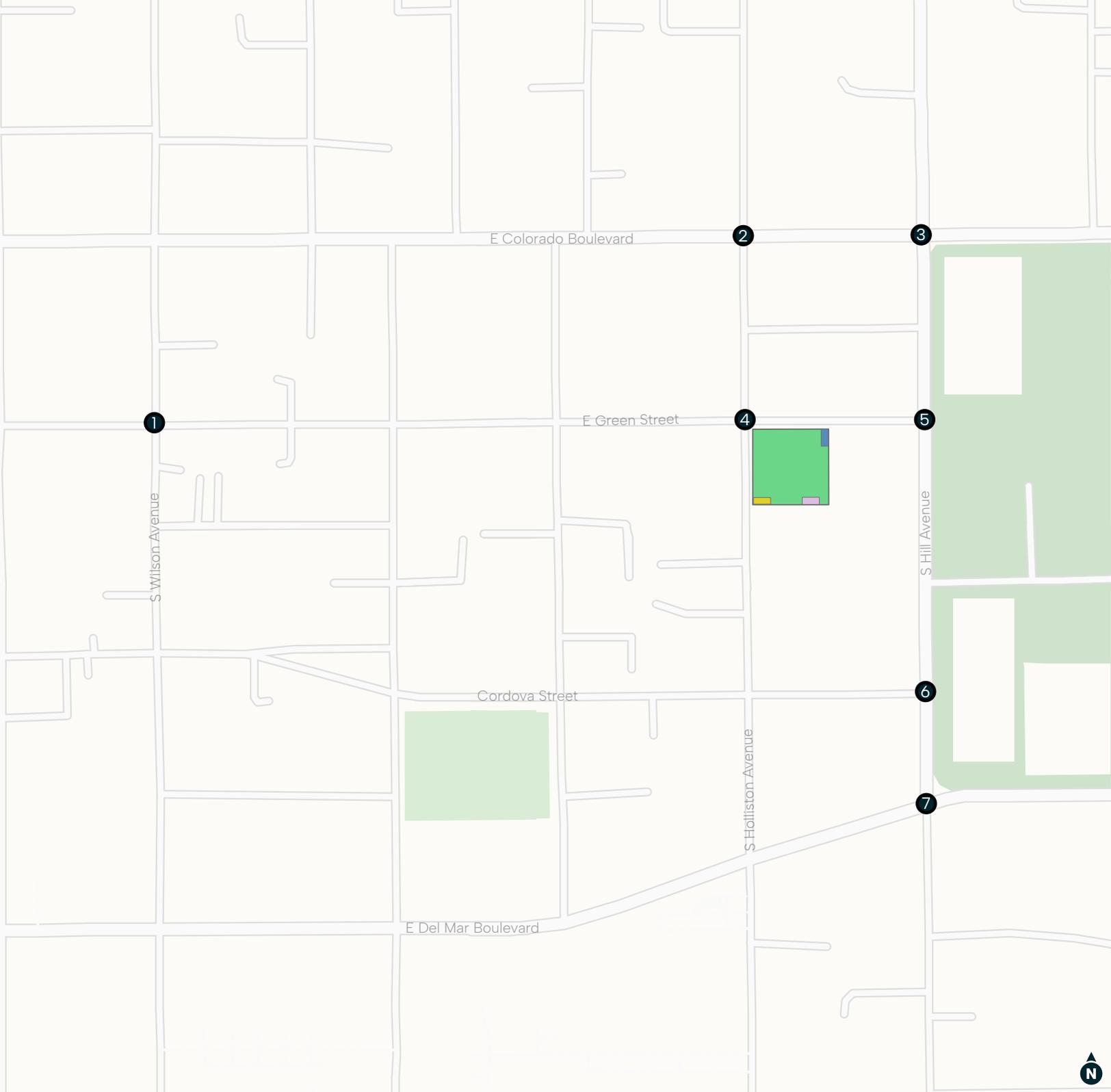


FIGURE 3

# Project Location & Study Intersections

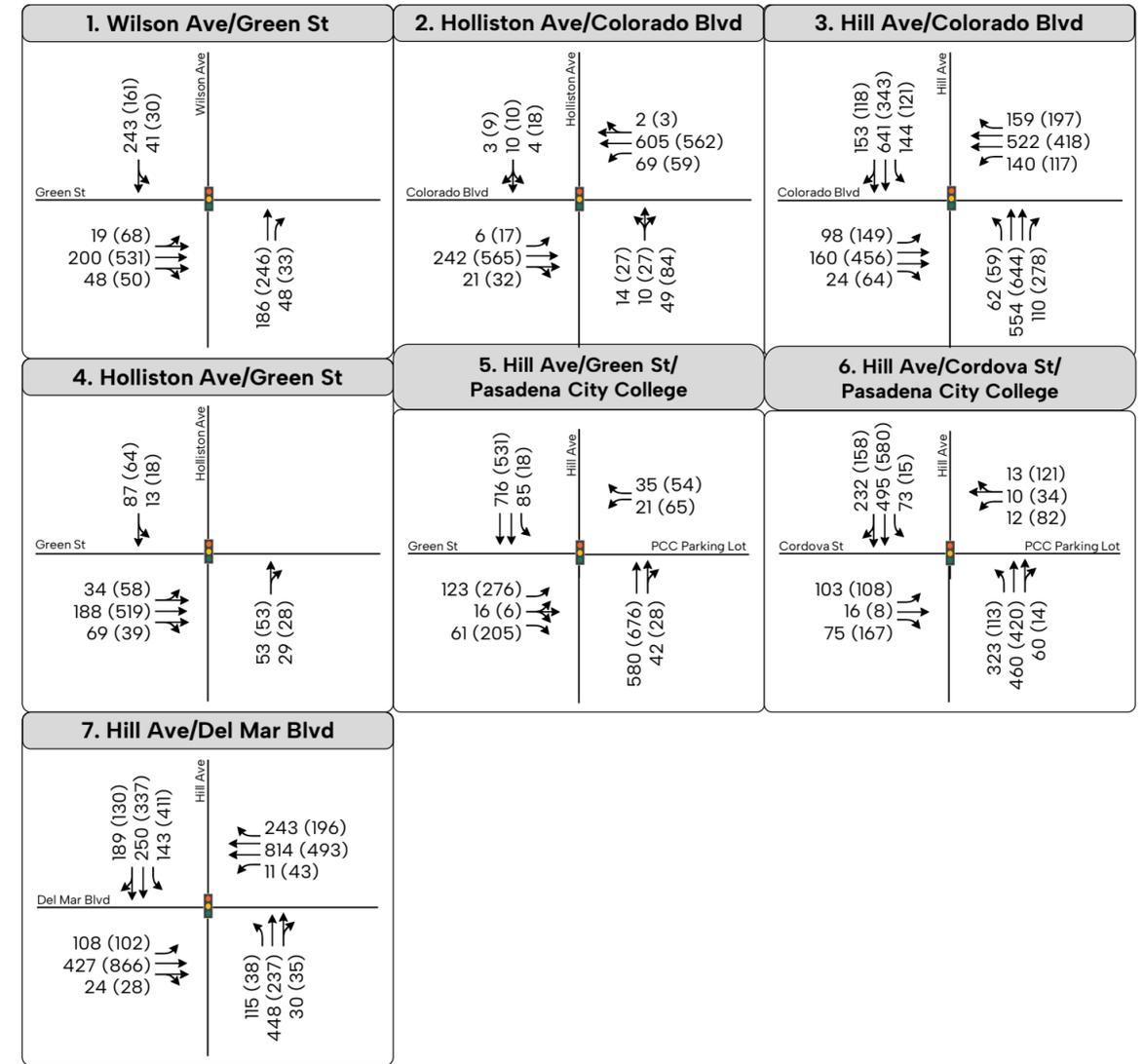


FIGURE 4  
**Peak Hour Traffic Volumes and Lane Configurations  
 Existing Conditions (2025)**

## 4.3 Intersection Level of Service Analysis

This section summarizes the results of the LOS analysis that was performed for the study intersections in existing and future year conditions. All LOS tables show delay in seconds.

### 4.3.1 Existing Conditions

Existing intersection operations were evaluated during the AM and PM peak hours at the study intersections using HCM 7<sup>th</sup> Edition methodology. Per City of Pasadena DOT guidelines, the following Synchro model inputs for saturation flow rates and peak hour factors were included in the analysis:

#### Saturation Flow Rates:

- 1,800 vehicles per hour per lane (vphpl) for exclusive through and right-turn lanes, and shared thru/right-turn or left-turn lanes
- 1,700 vphpl for exclusive left-turn lanes
- 1,600 for exclusive dual left-turn lanes

#### Peak Hour Factors:

- The Peak Hour Factor (PHF) was determined for each intersection as a whole based on traffic volumes collected in the field. The existing conditions PHF was applied to the analysis of future conditions with and without the proposed Project.

**Table 5** summarizes the existing LOS and delay at the study intersections. All LOS calculation sheets are provided in **Appendix B**.

**Table 5. Existing Conditions (2025) Intersection Peak Hour Level of Service**

INT #	Study Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay (s)	LOS	Delay (s)	LOS
1	Wilson Avenue & Green Street	Signal	14.6	B	14.0	B
2	Holliston Avenue & Colorado Boulevard	Signal	27.5	C	24.4	C
3	Hill Avenue & Colorado Boulevard	Signal	33.4	C	28.3	C
4	Holliston Avenue & Green Street	Signal	16.2	B	9.4	A
5	Hill Avenue & Green Street / Pasadena City College Dwy	Signal	8.5	A	9.8	A
6	Hill Avenue & Cordova Street / Pasadena City College Dwy	Signal	10.6	B	12.9	B
7	Hill Avenue & Del Mar Boulevard	Signal	26.1	C	35.8	D

As shown in **Table 5** above, all of the study intersections are currently operating at LOS C or better during the AM peak hour. During the PM peak hour, six of the seven study intersections operate at LOS C or better. The Hill Avenue and Del Mar Boulevard intersection operates at LOS C during the AM peak hour and LOS D during the PM peak hour.

### 4.3.2 Existing Plus Project Conditions

This section presents the analysis of Existing Plus Project conditions. Existing Plus Project conditions were developed by adding the vehicle trips estimated to be generated by the proposed Project to the existing conditions traffic volumes.

As a first step, trip distribution assumptions were developed to determine the origin and destination of new vehicle trips associated with the proposed Project. The Project trip distribution is based on the land use, the circulation network in the vicinity of the Project, and project access locations, and was derived by utilizing the City of Pasadena Travel Demand Model (via a select zone model run).

As a second step, the new trips estimated to be generated by the Project, as shown in **Table 2**, were then assigned to the surrounding roadway system based on the distribution pattern to estimate the Project-related peak-hour traffic at both study intersections. **Figure 5** illustrates the distribution of Project-generated trips on the surrounding roadway network, and **Figure 6** shows the Project-generated traffic volumes at the study intersections.

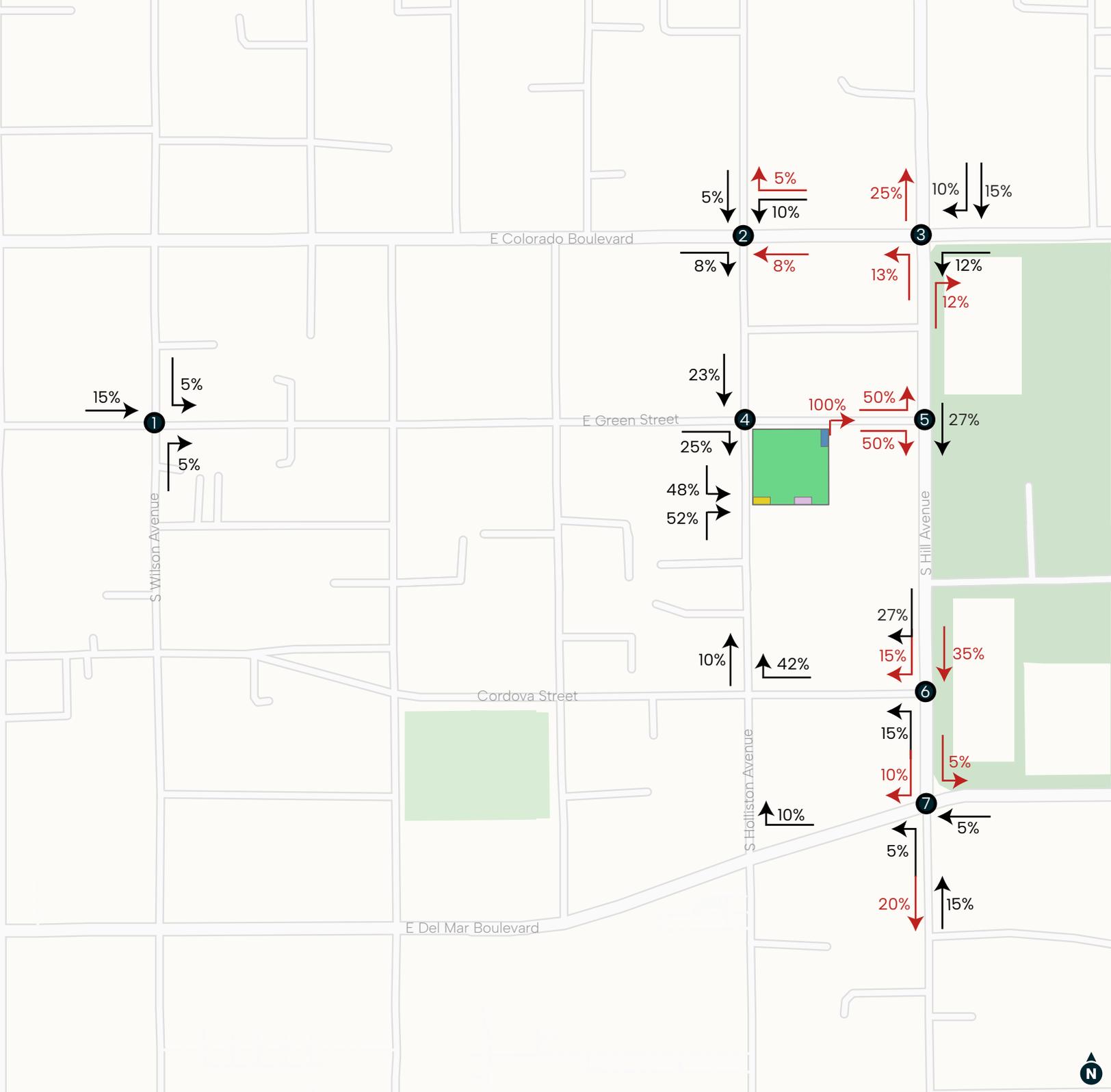


FIGURE 5

# Project Trip Distribution

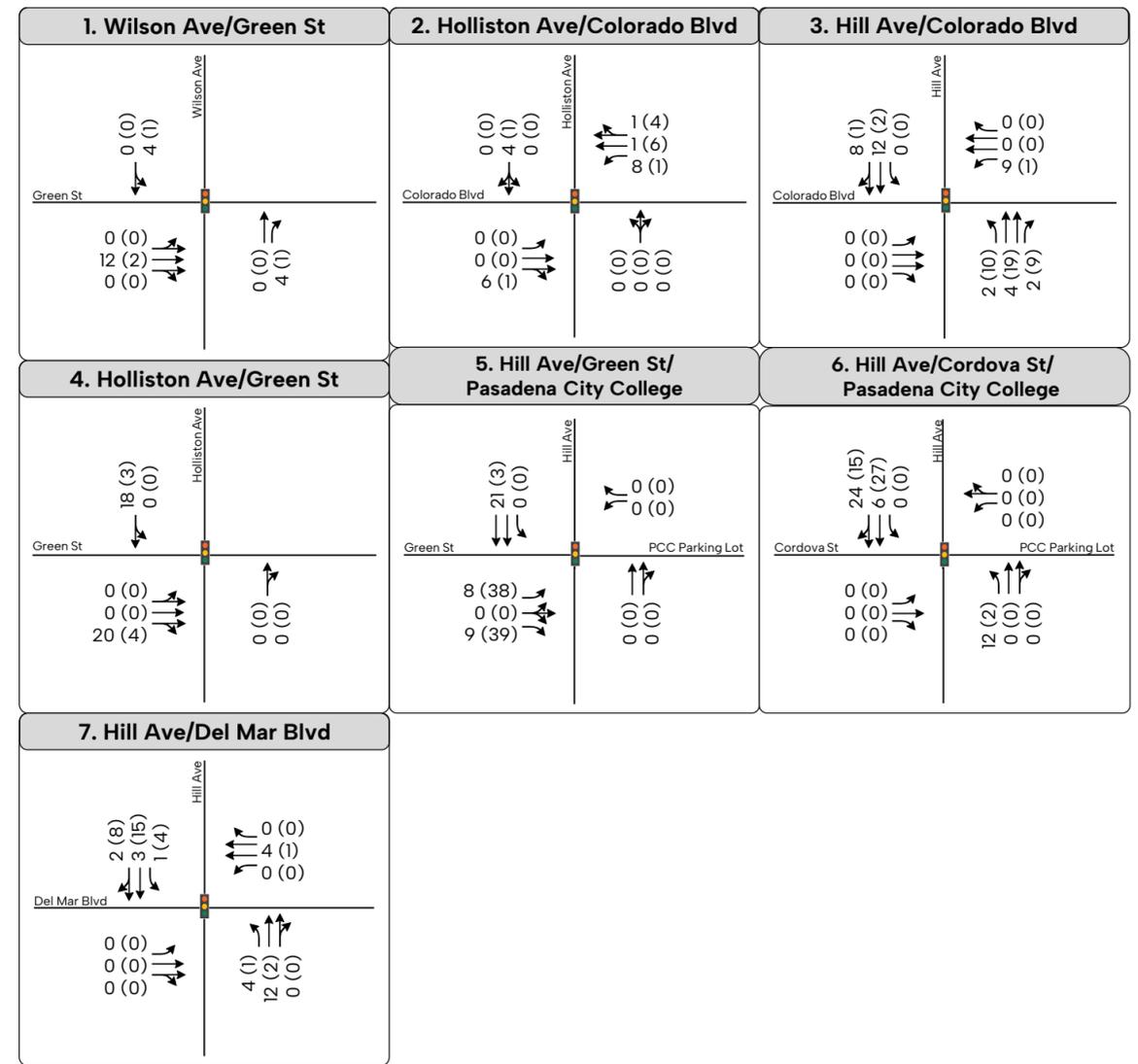
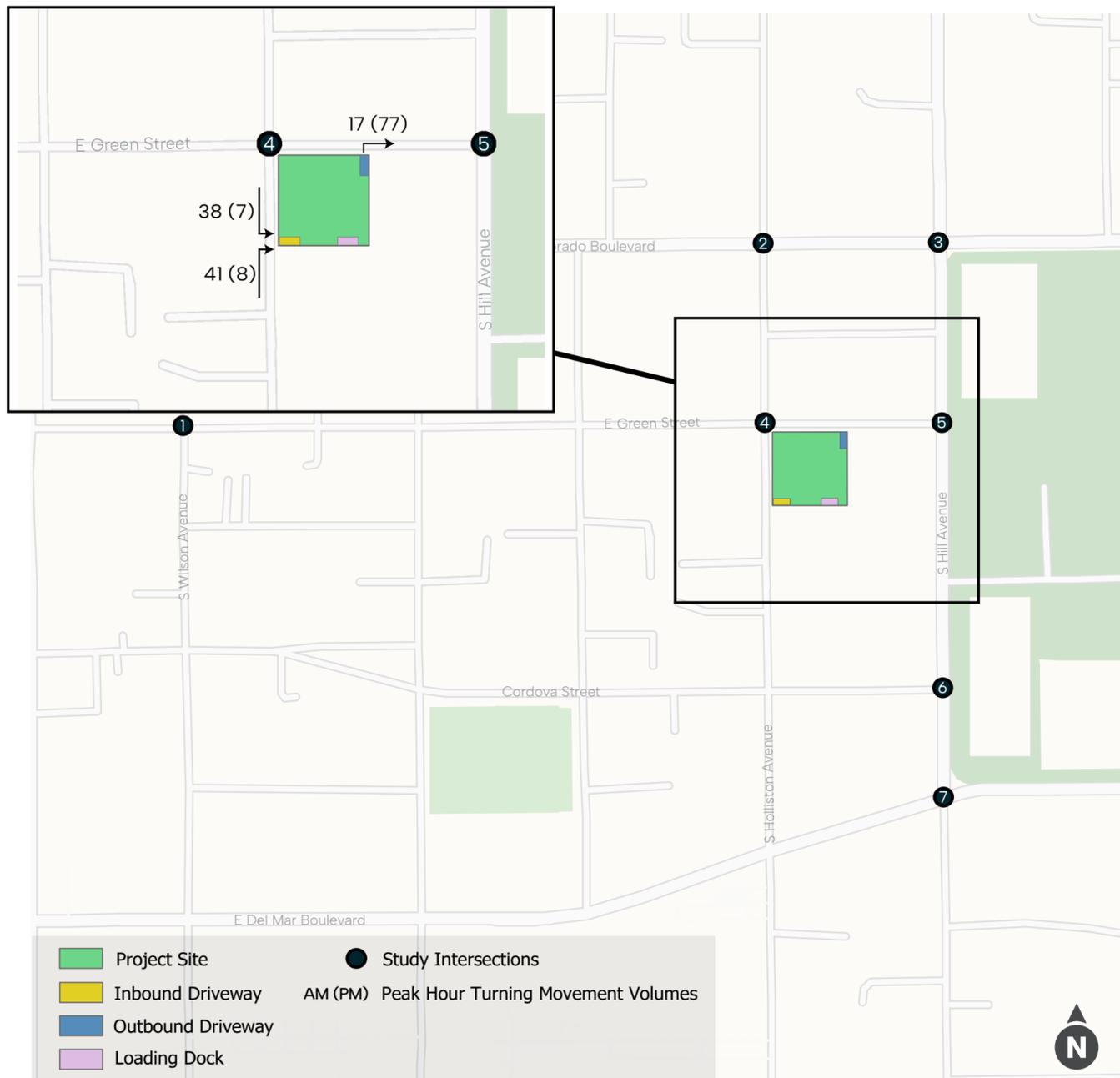


FIGURE 6  
**Peak Hour Traffic Volumes and Lane Configurations  
 Project Generated Trips**

Existing Plus Project LOS and delay at the study intersections is summarized in **Table 6**. Existing Plus Project traffic volumes are shown in **Figure 7**.

**Table 6. Existing Plus Project Conditions (2025) Intersection Peak Hour Level of Service**

INT #	Study Intersection	Existing Conditions				Existing Plus Project Conditions				Exceeds LOS Cap?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	
1	Wilson Ave & Green St	14.6	B	14.0	B	14.6	B	14.0	B	No
2	Holliston Ave & Colorado Blvd	27.5	C	24.4	C	27.5	B	24.5	C	No
3	Hill Ave & Colorado Blvd	33.4	C	28.3	C	33.9	C	28.5	C	No
4	Holliston Av & Green St	16.2	B	9.4	A	16.5	B	9.5	A	No
5	Hill Ave & Green St / Dwy	8.5	A	9.8	A	8.7	A	10.0	A	No
6	Hill Ave & Cordova St / Dwy	10.6	B	12.9	B	11.0	B	13.0	B	No
7	Hill Ave & Del Mar Blvd	26.1	C	35.8	D	26.3	C	36.2	D	No

As shown in **Table 6**, all of the study intersections are forecasted to operate at LOS C or better during the AM peak hour. During the PM peak hour, six of the seven study intersections are forecasted to operate at LOS C or better. The Hill Avenue and Del Mar Boulevard intersection is forecasted to operate at LOS C during the AM peak hour and LOS D during the PM peak hour. These results are consistent with existing conditions. None of the study intersections exceed the LOS cap with the proposed Project.

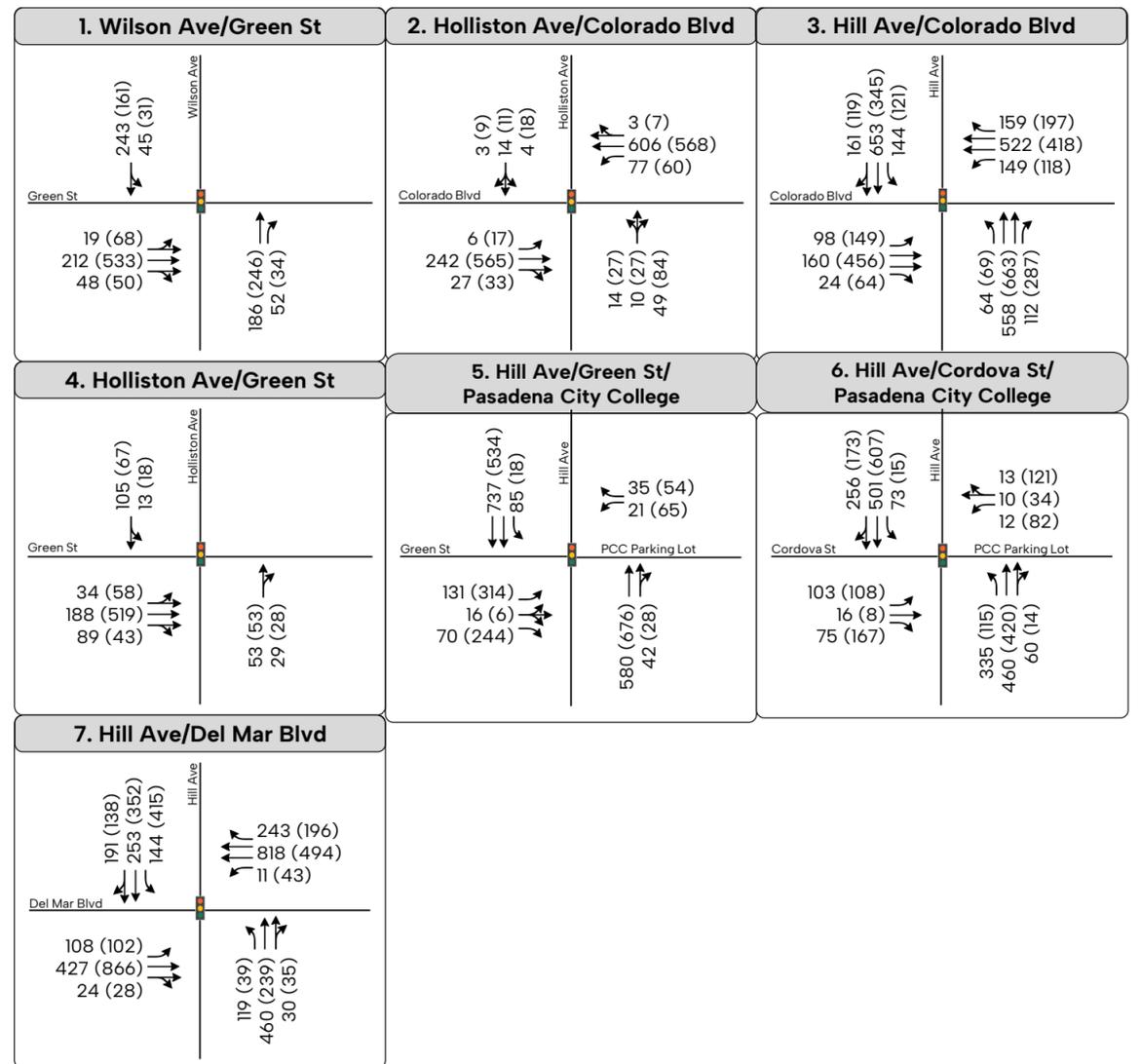
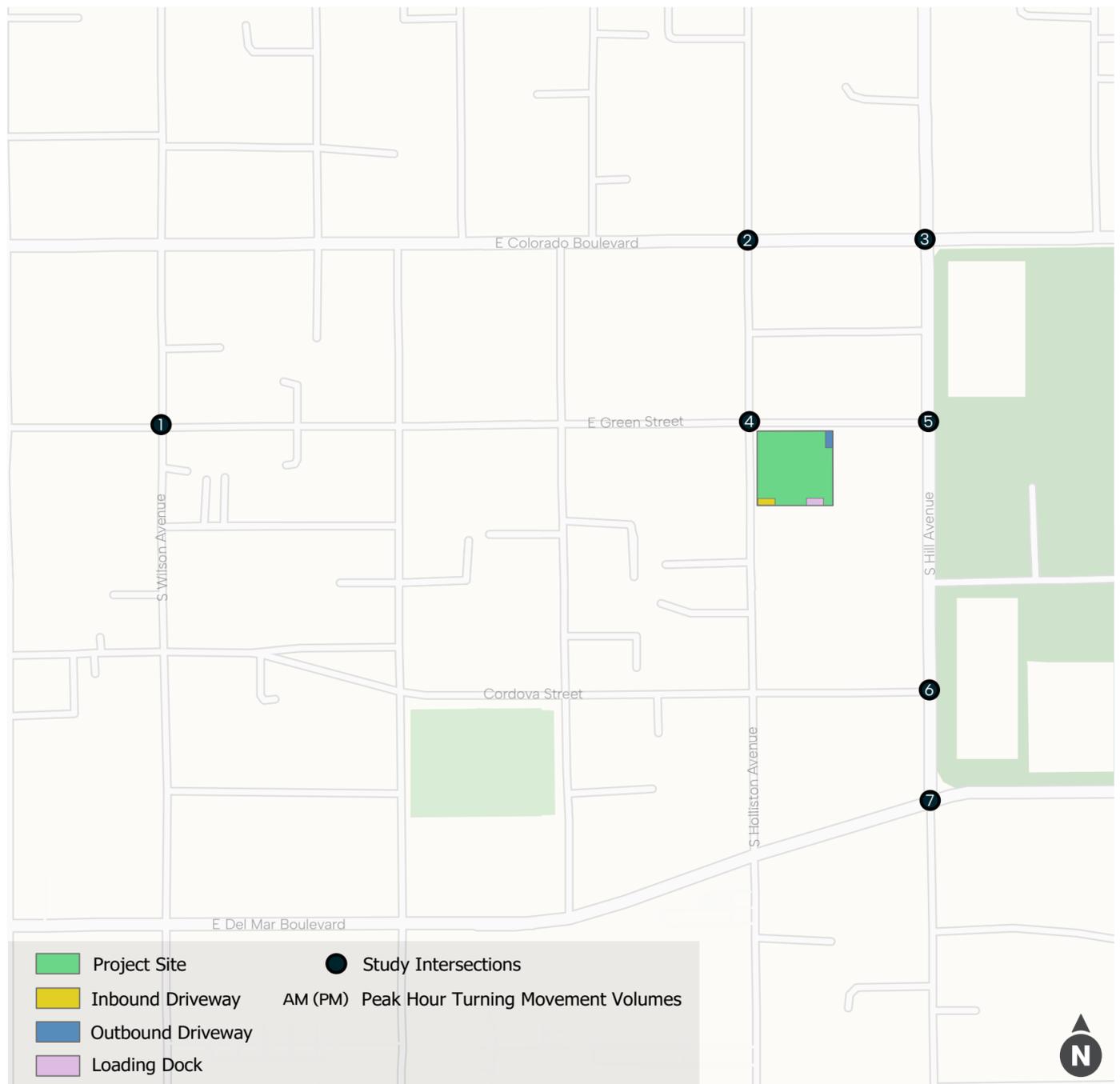


FIGURE 7  
**Peak Hour Traffic Volumes and Lane Configurations  
 Existing Plus Project Conditions (2025)**

### 4.3.3 Future Baseline Conditions

This section presents the analysis of Future Baseline conditions (without the proposed Project) for the proposed Project’s opening year of 2027. Future Baseline conditions traffic volumes were developed by utilizing the City of Pasadena Travel Demand Model to evaluate projected citywide growth in traffic volumes between the model’s base year (2017) and future year (2035) scenarios. Based on the projected citywide growth in traffic volumes, a growth rate of 1.4% (0.7% per year) was applied to the Existing Conditions traffic volumes to derive Future Baseline conditions (2027) traffic volumes at the study intersections. **Table 7** summarizes the Future Baseline conditions LOS and delay at the study intersections. Future Baseline conditions traffic volumes are shown in **Figure 8**.

**Table 7. Future Baseline Conditions (2027) Intersection Peak Hour Level of Service**

INT #	Study Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay (s)	LOS	Delay (s)	LOS
1	Wilson Avenue & Green Street	Signal	14.6	B	14.0	B
2	Holliston Avenue & Colorado Boulevard	Signal	27.6	C	24.5	C
3	Hill Avenue & Colorado Boulevard	Signal	33.7	C	28.4	C
4	Holliston Avenue & Green Street	Signal	16.3	B	9.4	A
5	Hill Avenue & Green Street / Pasadena City College Dwy	Signal	8.5	A	9.9	A
6	Hill Avenue & Cordova Street / Pasadena City College Dwy	Signal	10.9	B	13.1	B
7	Hill Avenue & Del Mar Boulevard	Signal	26.3	C	36.9	D

As shown in **Table 7**, all of the study intersections are forecasted to operate at LOS C or better during the AM peak hour. During the PM peak hour, six of the seven study intersections are forecasted to operate at LOS C or better. The Hill Avenue and Del Mar Boulevard intersection is forecasted to operate at LOS C during the AM peak hour and LOS D during the PM peak hour. No intersections are anticipated to exceed the LOS threshold in 2027 under Future Baseline conditions.

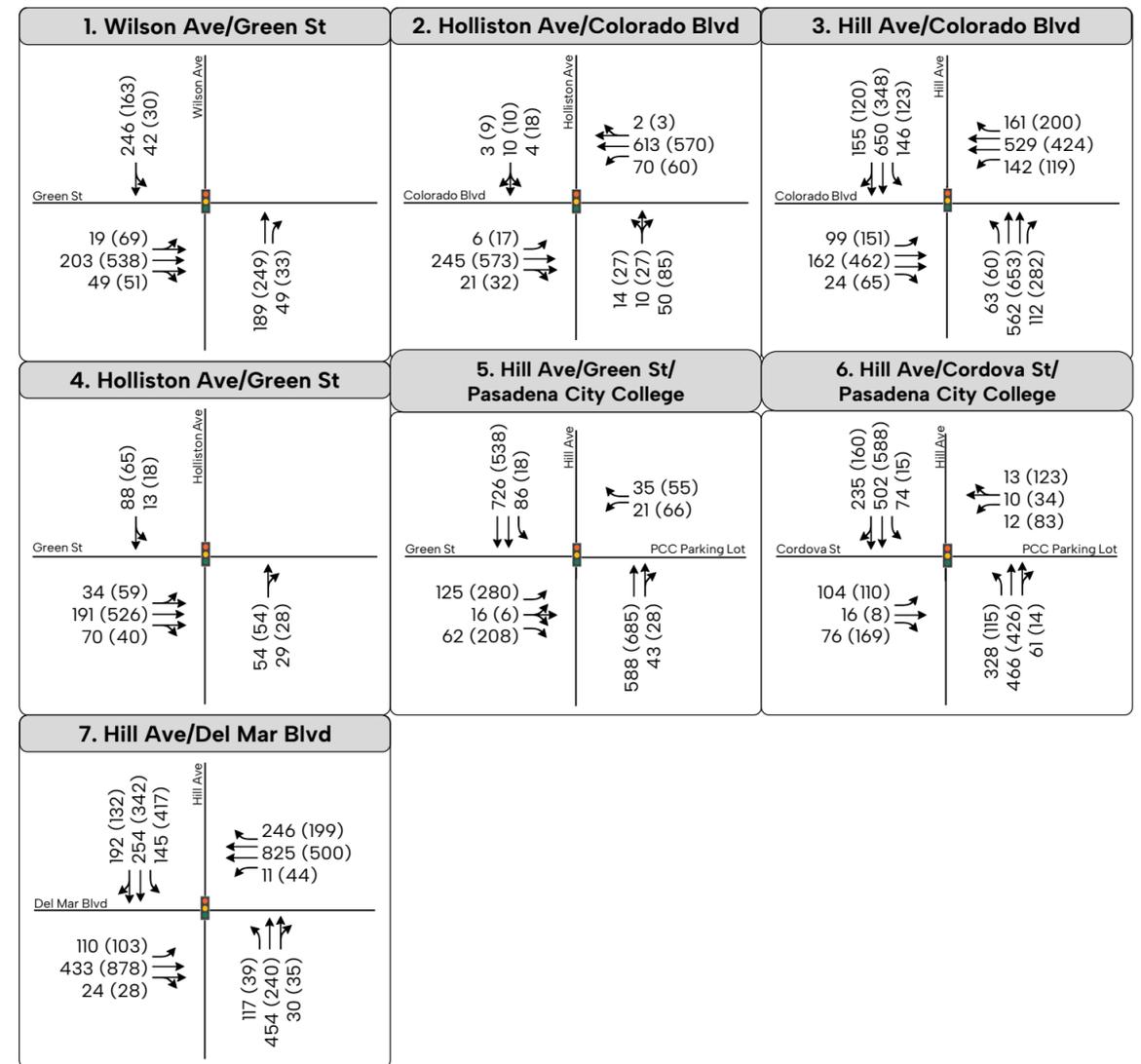


FIGURE 8  
**Peak Hour Traffic Volumes and Lane Configurations  
 Future Baseline Conditions (2027)**

### 4.3.4 Future with Project Conditions

This section presents the analysis of Future Plus Project conditions. Future Plus Project conditions traffic volumes were developed by adding the trips estimated to be generated by the proposed Project to the Future Baseline conditions traffic volumes. **Table 8** summarizes the Future Plus Project LOS and delay at the study intersections. Future Plus Project conditions traffic volumes are shown in **Figure 9**.

**Table 8. Future Plus Project Conditions (2027) Intersection Peak Hour Level of Service**

INT #	Study Intersection	Future Baseline Conditions				Future Plus Project Conditions				Exceeds LOS Cap?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	
1	Wilson Ave & Green St	14.6	B	14.0	B	14.6	B	14.0	B	No
2	Holliston Ave & Colorado Blvd	27.6	C	24.5	C	27.6	C	24.6	C	No
3	Hill Ave & Colorado Blvd	33.7	C	28.4	C	34.2	C	28.6	C	No
4	Holliston Av & Green St	16.3	B	9.4	A	16.5	B	9.5	A	No
5	Hill Ave & Green St / Dwy	8.5	A	9.9	A	8.7	A	10.0	B	No
6	Hill Ave & Cordova St / Dwy	10.9	B	13.1	B	11.4	B	13.2	B	No
7	Hill Ave & Del Mar Blvd	26.3	C	36.9	D	26.5	C	37.4	D	No

As shown in **Table 8**, all of the study intersections are forecasted to operate at LOS C or better during the AM peak hour. During the PM peak hour, six of the seven study intersections are forecasted to operate at LOS C or better. The Hill Avenue and Del Mar Boulevard intersection is forecasted to operate at LOS C during the AM peak hour and LOS D during the PM peak hour. No intersections are anticipated to exceed the LOS threshold in 2027 under Future Plus Project conditions.

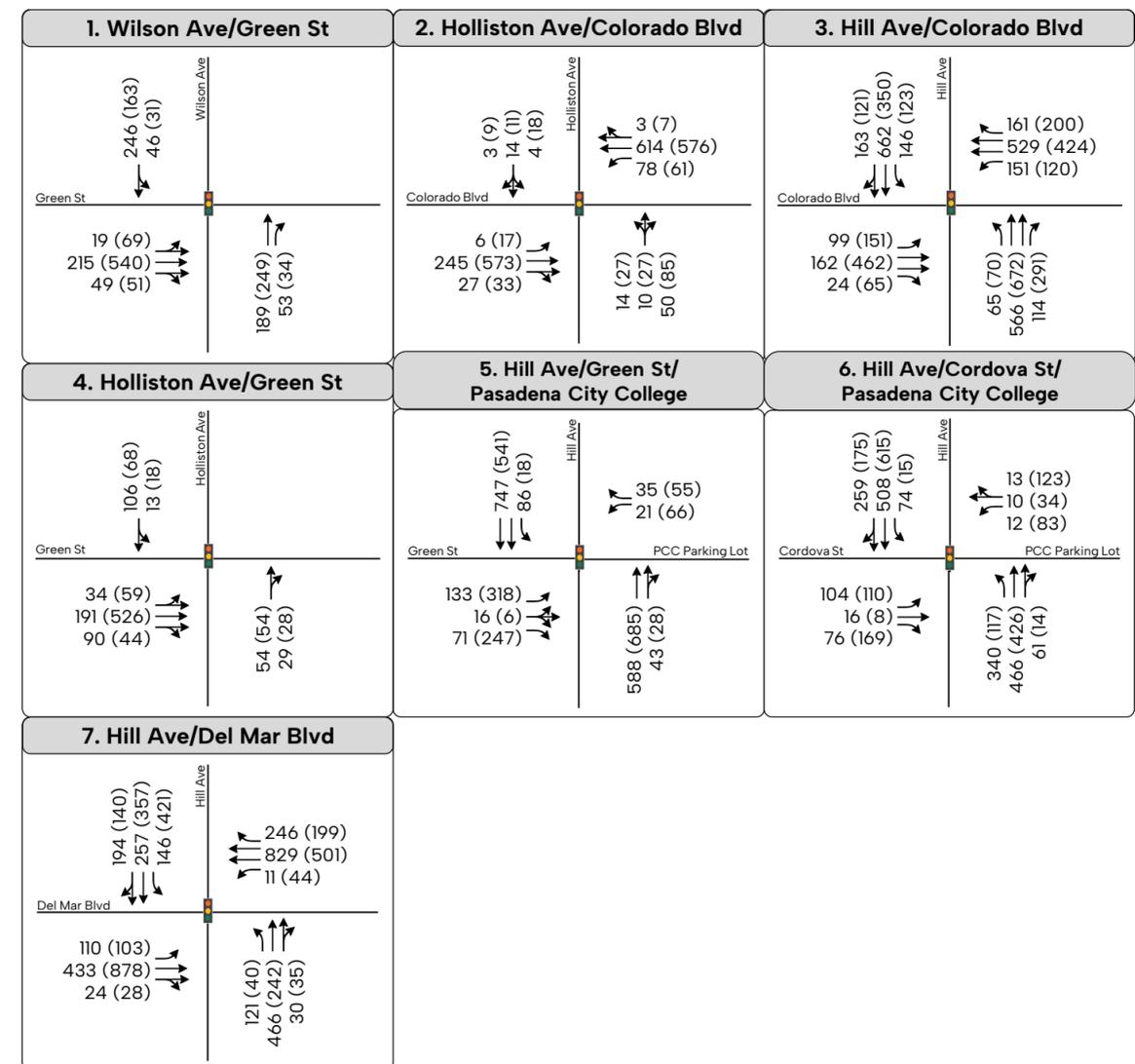


FIGURE 9  
**Peak Hour Traffic Volumes and Lane Configurations  
 Future Plus Project Conditions (2027)**

## 4.4 Off-Site Queuing Analysis

The exclusive turn lane movements at the study intersections were evaluated to determine if adequate storage would be provided with the addition of Project-related trips. **Table 9** summarizes the 95th percentile queue lengths for Future Baseline and Future Plus Project conditions. The calculated 95th percentile queue lengths are rounded up to the nearest ten feet. Queue lengths highlighted in green indicate turning movements that the Project would add vehicle trips to, and queue lengths shown in bold text indicate that queue length would exceed the available storage capacity. Queue output sheets are provided in **Appendix C**.

As shown in **Table 9**, 95<sup>th</sup> percentile queues are expected to exceed current exclusive turn lane pocket lengths in both Future Baseline and Future Plus Project conditions at the Hill Avenue & Cordova Street and Hill Avenue & Del Mar Boulevard intersections. At both intersections, the northbound left turn lane pocket length is expected to be exceeded only in the AM peak hour. At the intersection of Hill Avenue & Del Mar Boulevard, the southbound left turn lane pocket length is expected to be exceeded during the AM and PM peak hours. Traffic generated by the Project is not expected to cause exclusive turn lanes that are under capacity under Future Baseline conditions to exceed their capacities.

**Table 9. Off-Site Queuing Analysis Summary**

Int #	Intersection	Movement	Storage Length (ft)	Future Baseline Conditions		Future Plus Project Conditions	
				AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
1	Wilson Ave & Green St	NBR	60	20	20	20	20
2	Holliston Ave & Colorado Blvd	EBL	130	10	20	10	20
		WBL	130	60	80	70	80
3	Hill Ave & Colorado Blvd	NBL	140	50	40	50	50
		NBR	120	40	110	40	120
		SBL	120	90	80	90	80
		EBL	160	80	110	80	110
		EBR	60	0	10	0	10
		WBL	140	100	90	110	90
5	Hill Ave & Green St	EBL	380	70	140	70	160
		EBR	380	30	50	30	50
		SBL	140	70	20	70	20
6	Hill Ave & Cordova St	NBL	50	<b>230</b>	50	<b>300</b>	50
		SBL	110	70	20	70	20
		EBL	180	100	110	100	110
		EBR	120	30	50	30	50
7	Hill Ave & Del Mar Blvd	NBL	80	<b>150</b>	60	<b>160</b>	60
		SBL	100	<b>120</b>	<b>600</b>	<b>120</b>	<b>610</b>
		EBL	150	150	140	150	140
		WBL	130	30	70	30	70

# 5. Active Transportation Assessment

This Active Transportation Assessment evaluates existing pedestrian, bicycle, and transit infrastructure in the vicinity of the project site. An Active Transportation Inventory Map identifies key facilities within a ¼-mile radius of the project site, including bicycle infrastructure (e.g., bike lanes, Class IV cycle tracks), nearby bus stops, and land uses that are likely to attract pedestrian or bicycle trips, such as schools and businesses. In addition, this assessment documents existing conditions along the project frontages, including the presence and condition of sidewalks, curb ramps, bus stops, and bike facilities.

**Figure 10** below identifies the following local conditions within ¼-mile of the project site:

Bicycle facilities are located along Cordova Street. Buffered Class II bike lanes are present along a 1.5-mile segment from Hill Avenue to Arroyo Parkway. These facilities are part of a broader complete streets effort by the City of Pasadena that enhances conditions for all users through pedestrian ADA upgrades, curb extensions at eight intersections, and new and upgraded traffic signals.

Transit stops are served by LA Metro, Pasadena Transit, and Foothill Transit with multiple bus lines stopping at Colorado Boulevard and Del Mar Boulevard near Hill Avenue. Key stops include Metro Routes 180, 187, and 267, Pasadena Transit Route 10, and limited Foothill Transit service at Colorado/Hill.

Bicycle and pedestrian trip generating land uses within the project vicinity include:

- Pasadena City College
- St. Philip The Apostle Church
- Hill Avenue Branch Library
- Caltech Student Housing
- The Aqua Courtyard Hotel

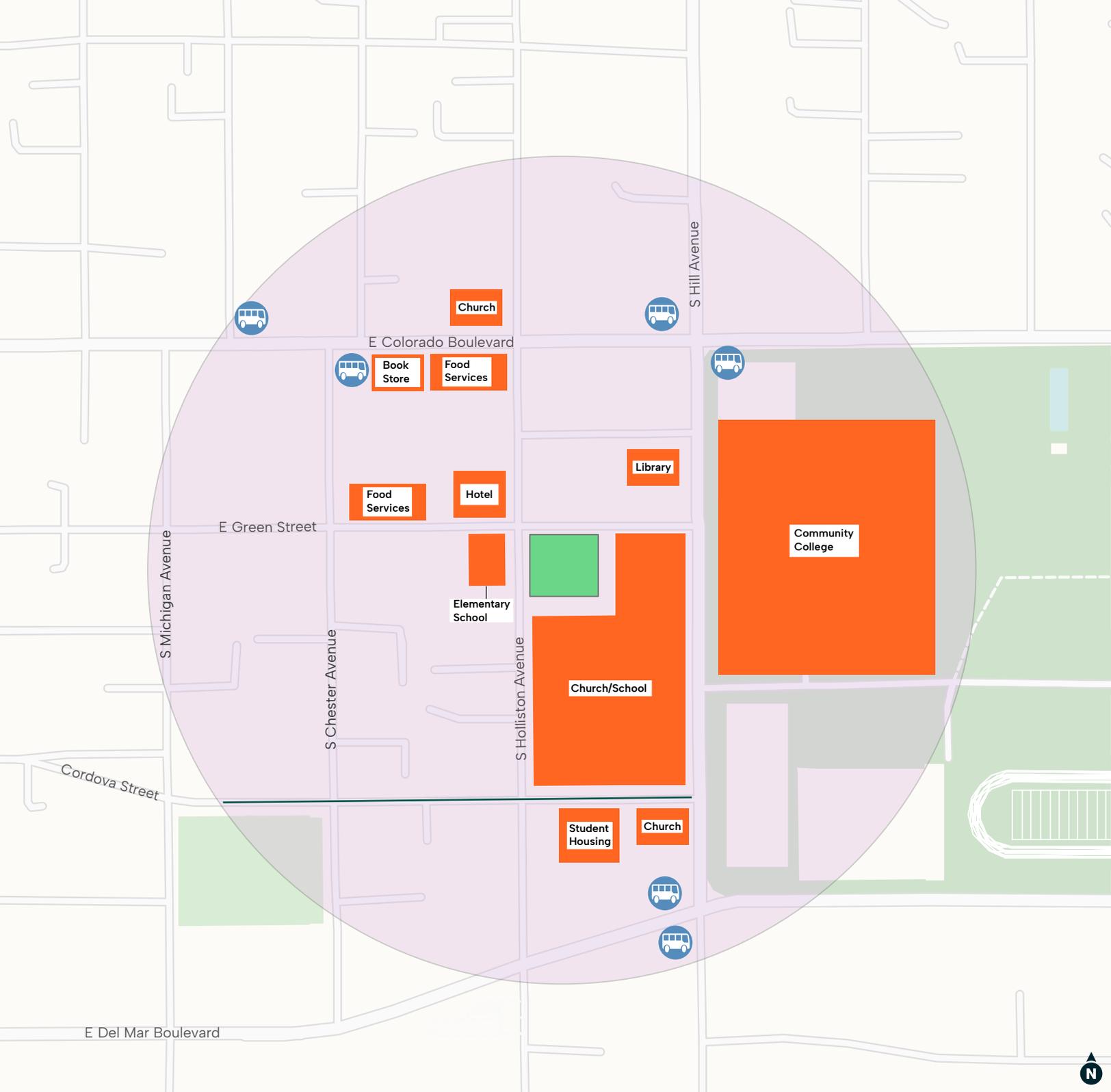


FIGURE 10

# Active Transportation Assessment

## 5.1 Existing Pedestrian Infrastructure

Holliston Avenue, classified as an Access roadway, and Green Street, classified as a City Connector roadway, provide satisfactory pedestrian facilities adjacent to the Project site. Along the project frontage, Green Street provides 6 feet of amenity / curb zone and 5 feet of walk zone. Holliston Avenue provides 12 feet of amenity / curb zone and 5 feet of walk zone. There are no deficiencies present along the Project frontage for pedestrian accommodations. **Figure 11** and **Figure 12** show the existing conditions along the Project frontage.

Figure 11. Holliston Avenue Sidewalk Along Project Frontage



Figure 12. Green Street Sidewalk Along Project Frontage



## 5.2 Existing Bicycle Facilities

No bicycle facilities currently exist along the Project frontages. The closest bicycle facilities to the Project exist along Cordova Street as shown in **Figure 10**. However, cyclists may still choose to use Green Street as an alternative parallel route to Colorado Boulevard, which has a much higher vehicle volume.

## 5.3 Existing Transit Amenities

No transit stops currently exist along the Project frontages. The closest transit stop to the Project is located at the intersection of Colorado Boulevard and Chester Avenue. This bus stop (Stop ID 1319) serves Metro lines 180 and 267 travelling eastbound along Colorado Boulevard.

Metro's North Hollywood to Pasadena Bus Rapid Transit project is expected to run buses along Green Street, with the route terminating at Hill Avenue. The project is still in the planning phase and construction is forecast to be completed in 2027.

## 5.4 Intersections

The signalized intersection of Green Street and Holliston Avenue is located adjacent to the Project site. This intersection is equipped with continental sidewalks, advanced stops, push buttons, an Accessible Pedestrian Signal (APS), a pedestrian countdown signal, and diagonal curb ramps with no obstructions present at any corner or leg of the intersection. **Figure 13** below presents the view of the signalized intersection facing eastbound from the northwest corner of the intersection.

Figure 13. Green Street/Holliston Avenue Intersection



## 5.5 Assessment

Per the City’s guidelines, a development project would result in a negative effect on the active transportation network if it resulted in the removal or degradation of existing infrastructure which supports pedestrian, bicycle, and transit travel modes. In addition, a development project would also have a negative effect on the transportation network if it resulted in increased pedestrian or bicycle demand for facilities which are missing, damaged, or not designed to current standards. Given these criteria, the assessment of the project’s impacts is shown in **Table 10**.

**Table 10. Active Transportation Impact Assessment**

Criteria	Yes/ No
<b>Assessment 1: Removal or degradation of existing infrastructure</b>	
Would the project remove transit stops, public benches/shelters, or other transit amenities?	No
Would the project remove bicycle lanes or public bicycle parking?	No
Would the project remove or obstruct sidewalks, pedestrian paths, or crossings?	No
Would the project degrade street buffering elements such as street trees, parkway strips, and bicycle lane buffers?	No
Would the project degrade visibility and lines of sight?	No
Would the project degrade appropriate-scale lighting?	No
<b>Assessment 2: Increased demand on missing/damaged/sub-standard facilities</b>	
Would the project increase pedestrian demand where there are missing curb ramps/crosswalks, narrow or broken sidewalks, or where a controlled crossing is not available without significant rerouting?	No
Would the project increase bicycle demand where there are no bicycle lanes, poor quality pavement, or lack of secure and well-lit parking?	No
Would the project increase transit demand where there are missing crossings or where stops are located in isolated, unshaded, or unlit areas?	No

## 6. Conclusions

Fehr & Peers prepared a Local Mobility Analysis for the proposed Research and Development building located at 1364 E. Green Street in the City of Pasadena. The following describes the results of the Local Mobility Analysis:

- The proposed Project is estimated to generate a total of 1,036 daily vehicle trips, with 96 vehicle trips in the AM peak hour (79 in, 17 out) and 92 vehicle trips in the PM peak hour (15 in, 77 out).
- None of the seven (7) study intersections are forecasted to operate at a Level of Service (LOS) that exceeds the City's LOS cap/threshold.
- The 95<sup>th</sup> percentile queues are expected to exceed current exclusive turn lane pocket lengths under both Future Baseline and Future Plus Project conditions at the Hill Avenue & Cordova Street and Hill Avenue & Del Mar Boulevard intersections. However, traffic generated by the Project is not expected to cause exclusive turn lanes that are under capacity under Future Baseline conditions to exceed their capacities.
- The proposed Project is not anticipated to remove or degrade existing active transportation infrastructure, or increase pedestrian, bicycle, or transit demand on facilities that are damaged or sub-standard within a 0.25-mile radius of the Project site.

# Appendix A.

# Traffic Count

# Data

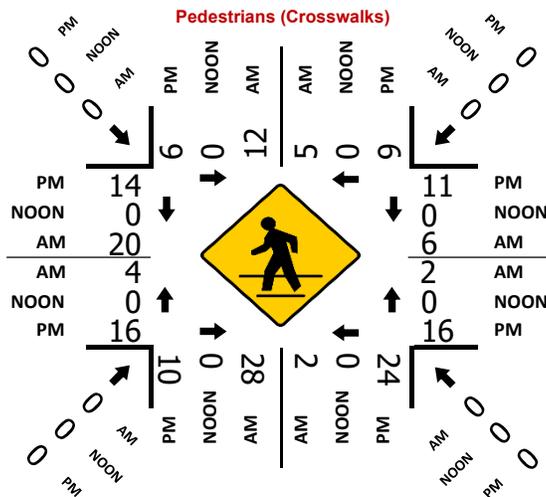
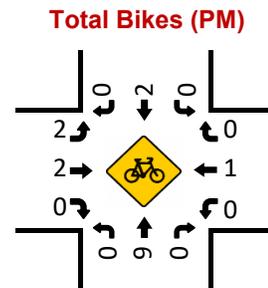
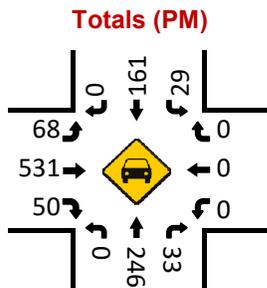
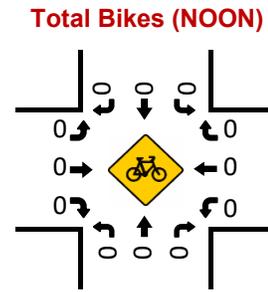
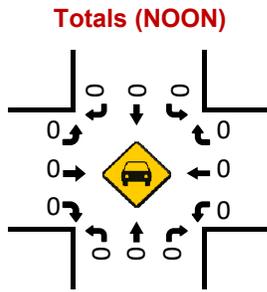
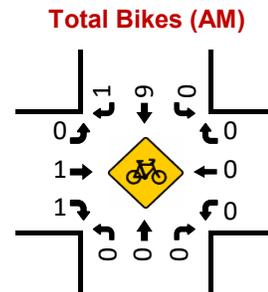
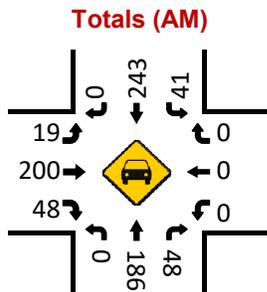
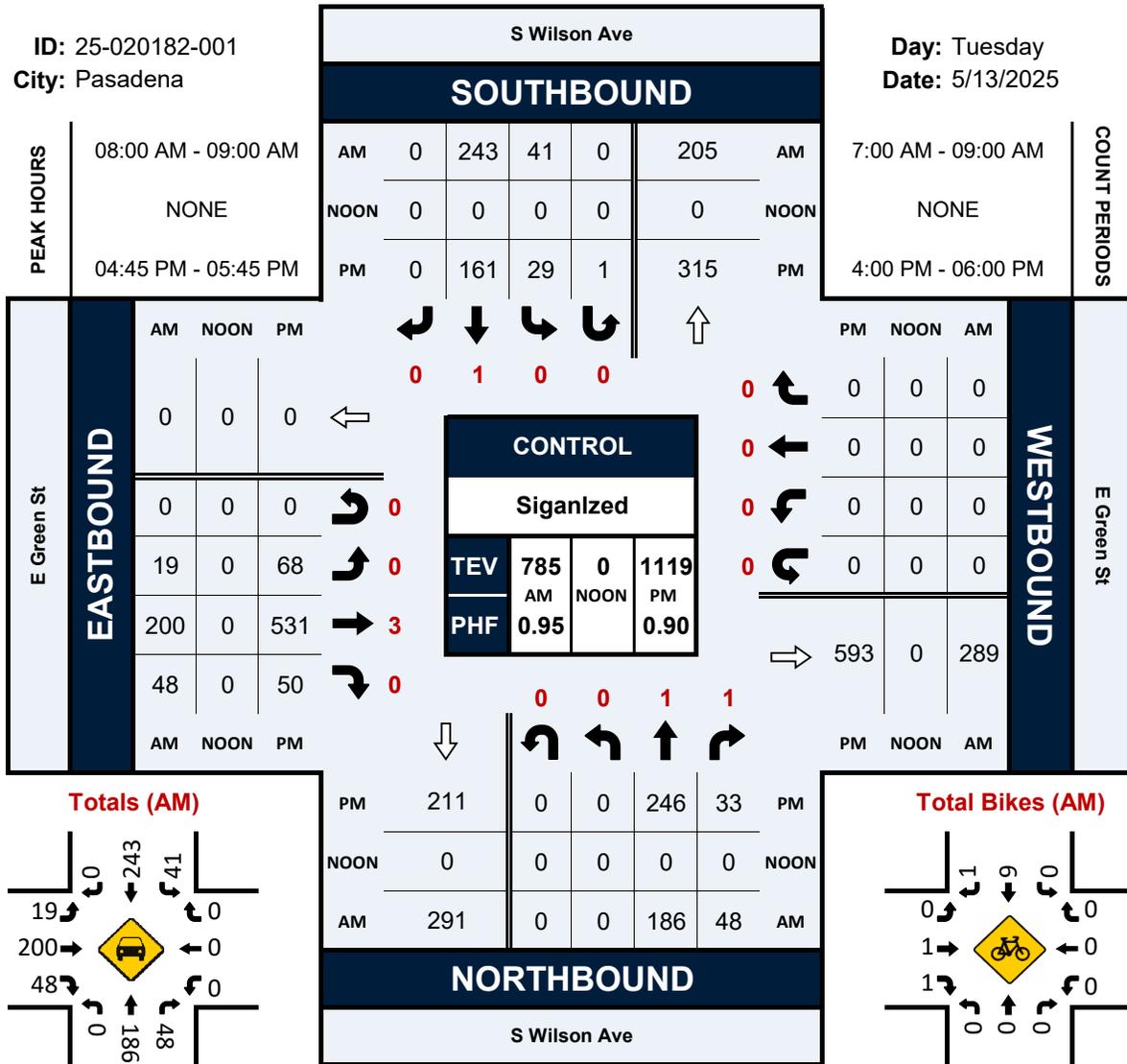
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# S Wilson Ave & E Green St

## Peak Hour Turning Movement Count

ID: 25-020182-001  
City: Pasadena

Day: Tuesday  
Date: 5/13/2025



# INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Tue, Jun 3, 25

**LOCATION:**  
NORTH & SOUTH: Pasadena  
EAST & WEST: N Holliston Ave  
E Colorado Blvd

**PROJECT #:** SC5439  
**LOCATION #:** 1  
**CONTROL:** SIGNAL

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AM	▲	N														
PM	←	W														
MD	▼	S														
OTHER	→	E														
OTHER																

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
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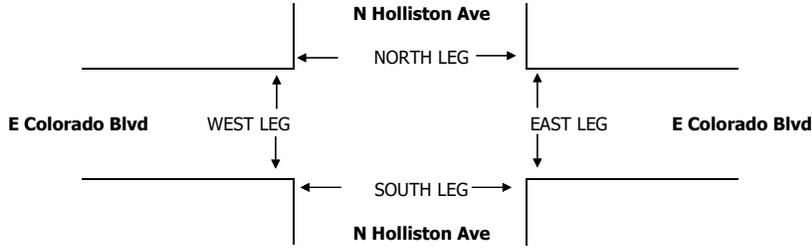
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NB	SB	EB	WB	TTL
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	7:15 AM	3	2	4	2	1	1	0	38	2	15	65	0	133
	7:30 AM	4	2	6	1	2	1	1	44	1	21	77	0	160
	7:45 AM	3	3	8	0	1	2	1	41	3	44	141	2	249
	8:00 AM	5	5	21	1	1	0	2	55	2	21	155	1	269
	8:15 AM	4	2	9	2	2	1	1	58	5	15	151	0	250
	8:30 AM	3	1	15	1	4	0	2	68	8	16	144	1	263
	8:45 AM	2	2	4	0	3	2	1	61	6	17	155	0	253
	VOLUMES	26	18	70	7	15	7	9	396	29	160	949	5	1,691
	APPROACH %	23%	16%	61%	24%	52%	24%	2%	91%	7%	14%	85%	0%	
APP/DEPART	114	/	32	29	/	204	434	/	473	1,114	/	982	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	14	10	49	4	10	3	6	242	21	69	605	2	1,035	
APPROACH %	19%	14%	67%	24%	59%	18%	2%	90%	8%	10%	89%	0%		
PEAK HR FACTOR	0.589			0.850			0.862			0.955			0.962	
APP/DEPART	73	/	18	17	/	100	269	/	295	676	/	622	0	
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	5:30 PM	5	7	13	2	2	1	3	151	7	11	124	2	328
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	APPROACH %	20%	20%	60%	45%	31%	24%	2%	93%	5%	9%	90%	1%	
APP/DEPART	240	/	84	62	/	188	1,250	/	1,335	1,185	/	1,130	0	
BEGIN PEAK HR	4:15 PM													
VOLUMES	27	27	84	18	10	9	17	565	32	59	562	3	1,413	
APPROACH %	20%	20%	61%	49%	27%	24%	3%	92%	5%	9%	90%	0%		
PEAK HR FACTOR	0.885			0.771			0.914			0.969			0.968	
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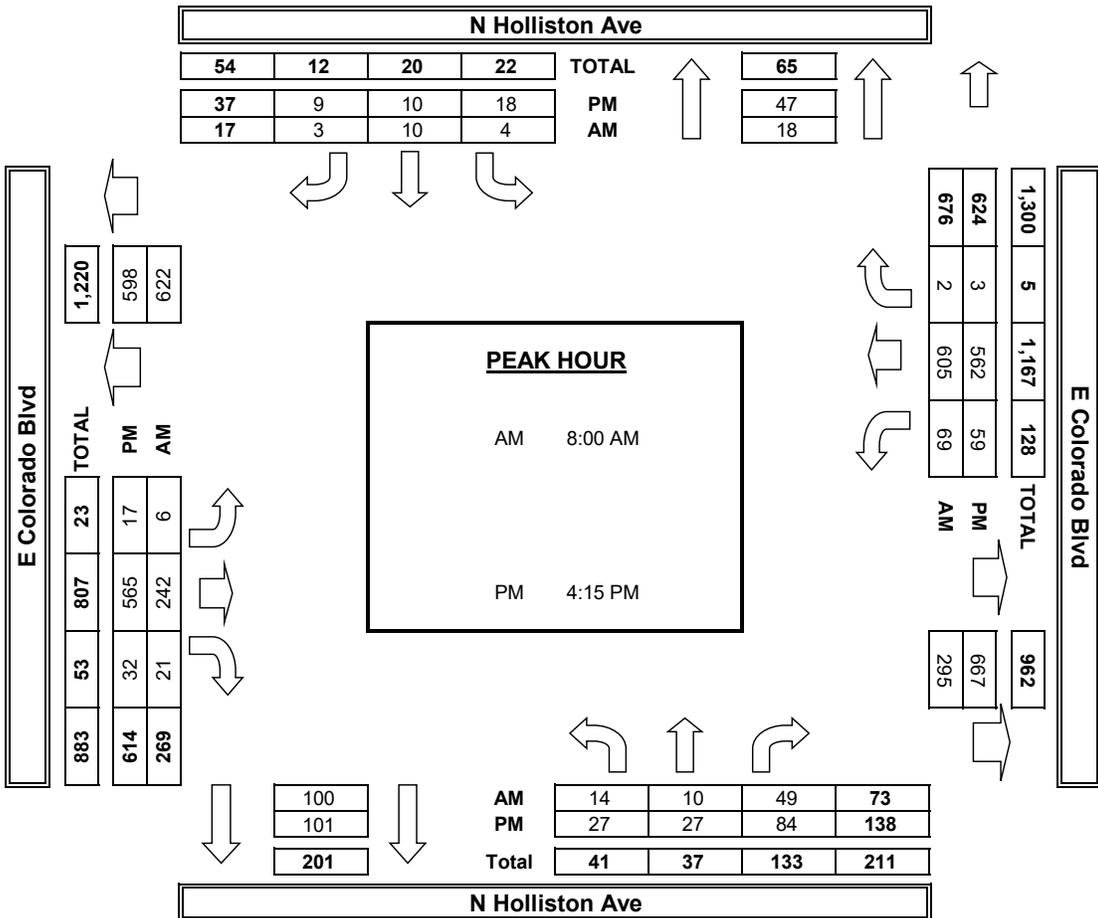
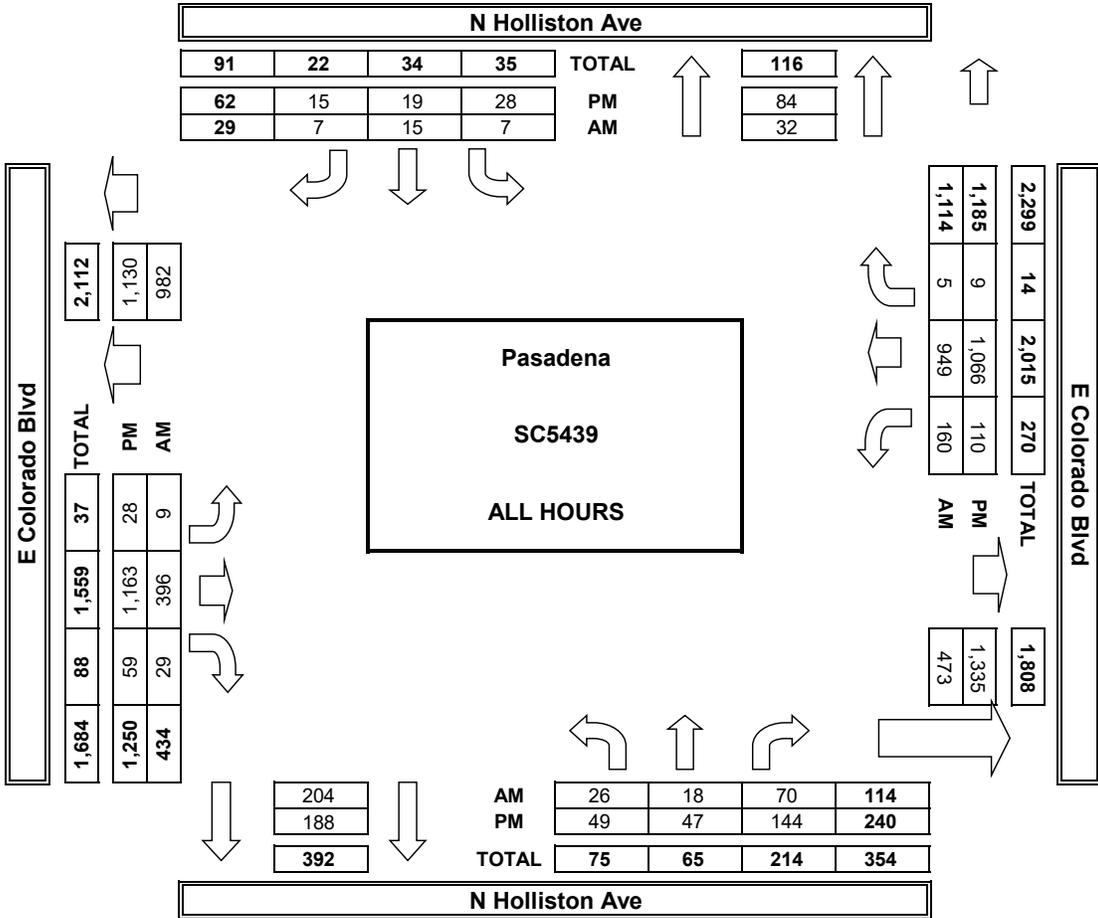
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	8:45 AM	1	5	2	3	11
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	5:45 PM	7	25	0	1	33
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ALL PED + BIKE & SCOOTER				
N LEG	S LEG	E LEG	W LEG	TOTAL
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2	3	1	0	6
0	5	2	3	10
4	3	1	2	10
2	4	1	2	9
3	7	1	3	14
1	4	1	4	10
1	5	2	3	11
13	33	11	18	75
8:00 AM				
4	22	5	3	34
7	17	4	4	32
4	14	2	3	23
4	14	1	5	24
6	9	2	4	21
4	9	1	3	17
6	14	1	1	22
7	25	0	1	33
42	124	16	24	206
4:15 PM				
17	50	9	16	92

PEDESTRIAN CROSSINGS				
N LEG	S LEG	E LEG	W LEG	TOTAL
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0	4	2	3	9
1	3	1	2	7
1	4	1	2	8
3	6	1	3	13
1	4	0	4	9
1	5	2	3	11
8	31	9	18	66
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5	15	4	4	28
3	13	2	3	21
4	14	1	5	24
5	8	2	4	19
3	9	1	3	16
5	12	1	1	19
7	25	0	1	33
35	117	15	24	191
4:15 PM				
17	50	9	16	92

BICYCLE & SCOOTER CROSSINGS				
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0	1	0	0	1
3	0	0	0	3
1	0	0	0	1
0	1	0	0	1
0	0	1	0	1
0	0	0	0	0
5	2	2	0	9
8:00 AM				
1	1	1	0	3
2	2	0	0	4
1	1	0	0	2
0	0	0	0	0
1	1	0	0	2
1	0	0	0	1
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**AimTD LLC**  
TURNING MOVEMENT COUNTS

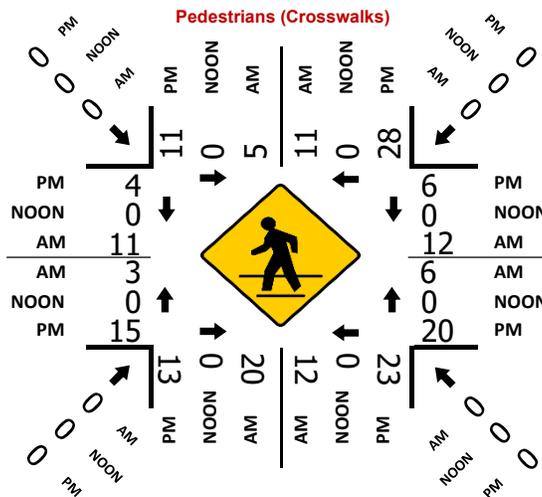
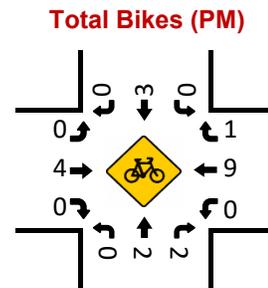
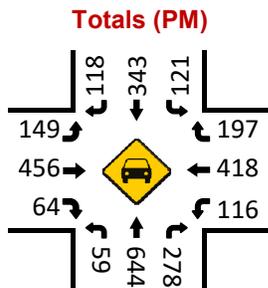
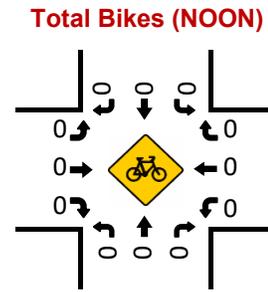
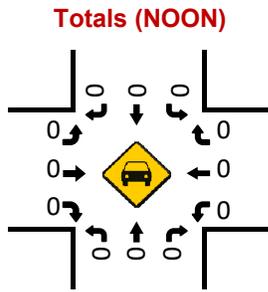
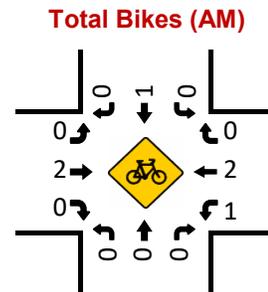
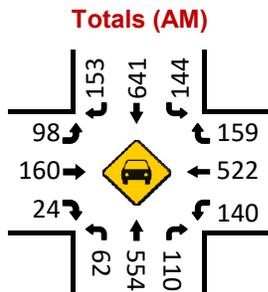
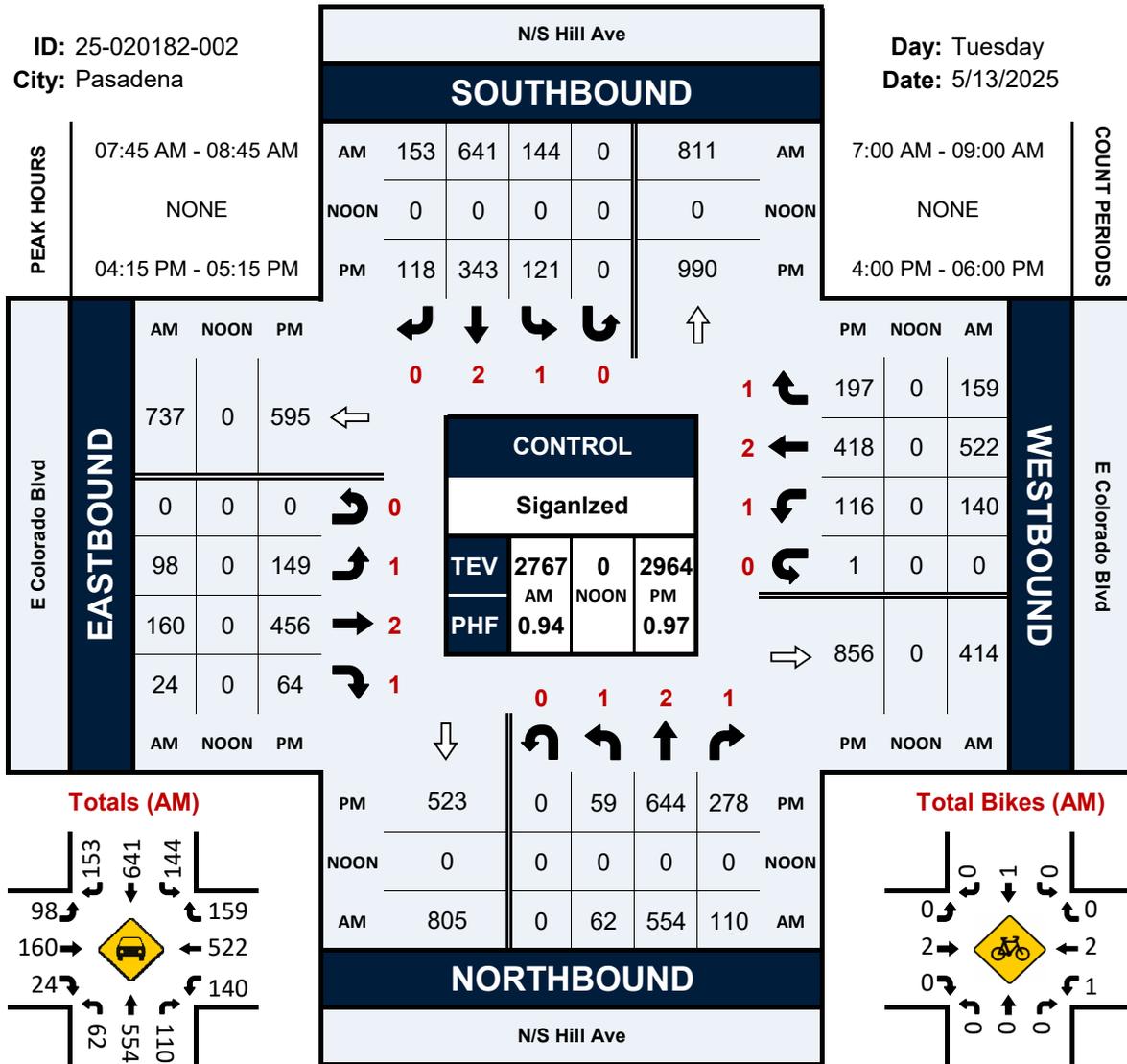


# N/S Hill Ave & E Colorado Blvd

## Peak Hour Turning Movement Count

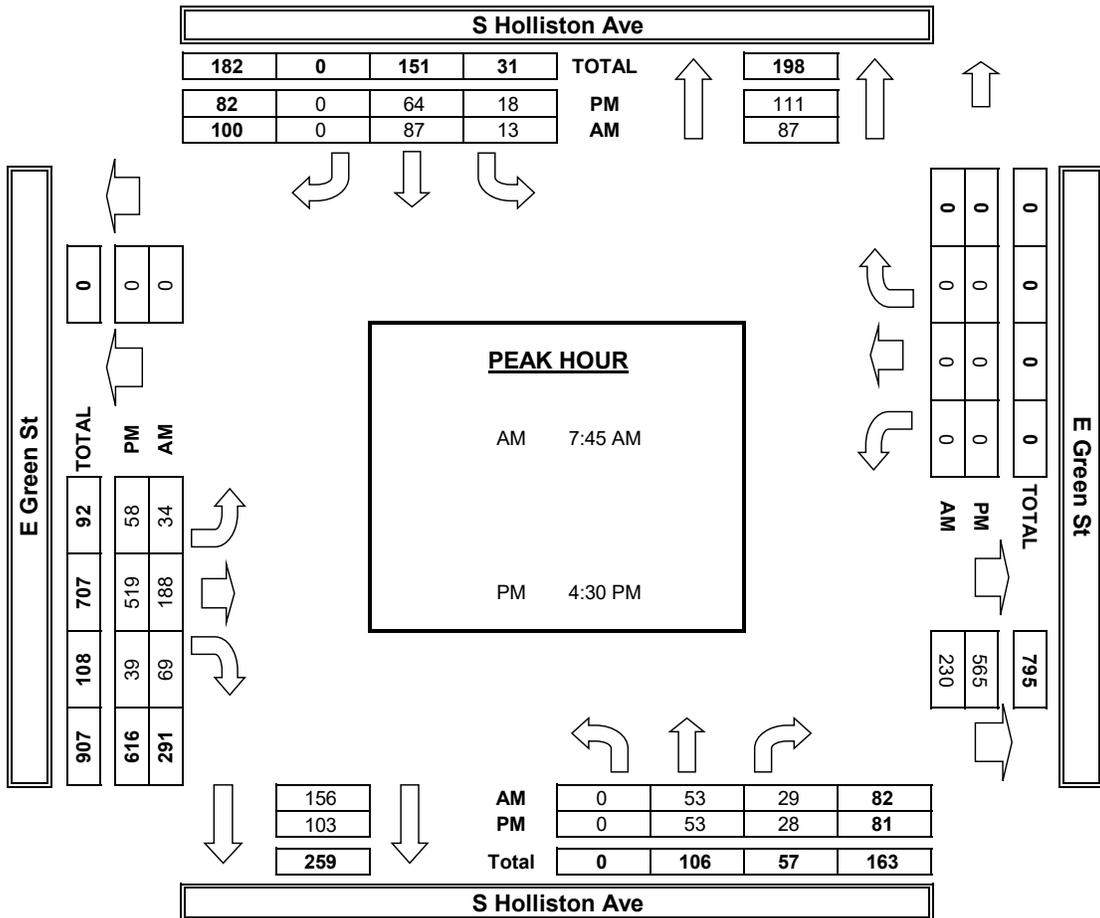
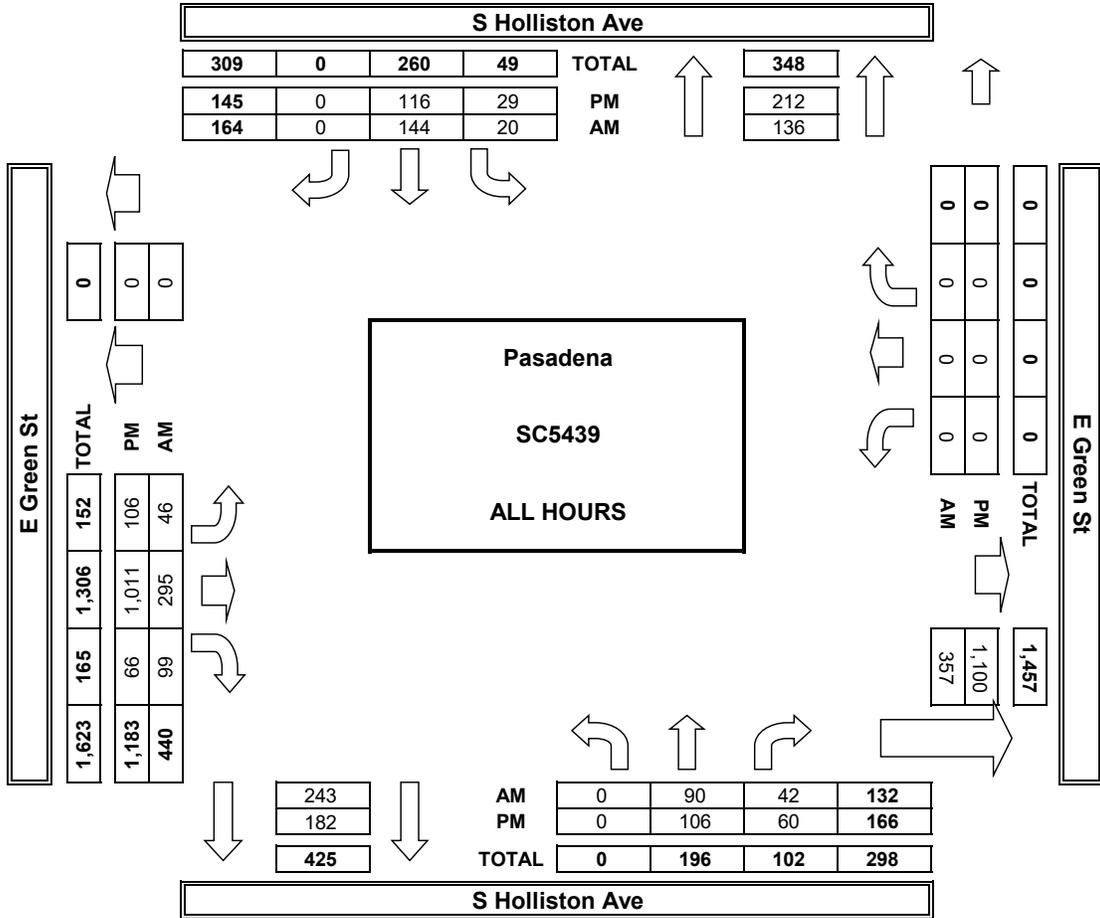
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City: Pasadena

Day: Tuesday  
Date: 5/13/2025





**AimTD LLC**  
TURNING MOVEMENT COUNTS



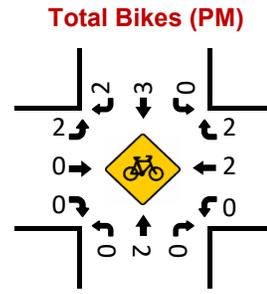
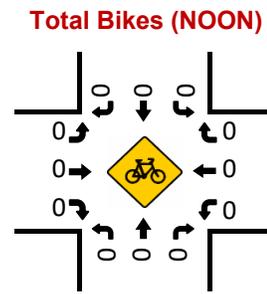
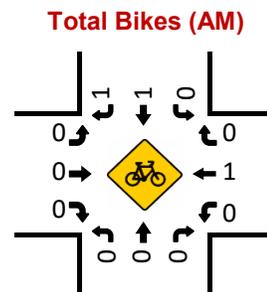
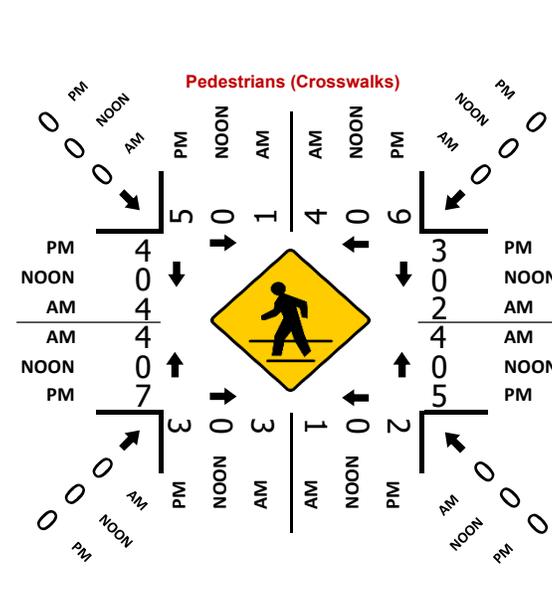
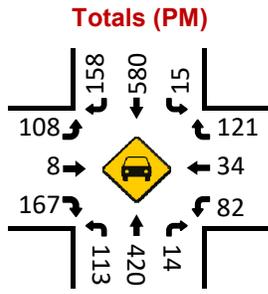
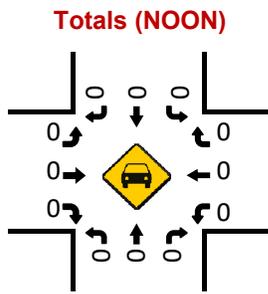
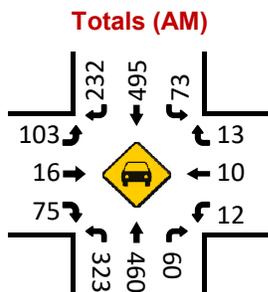
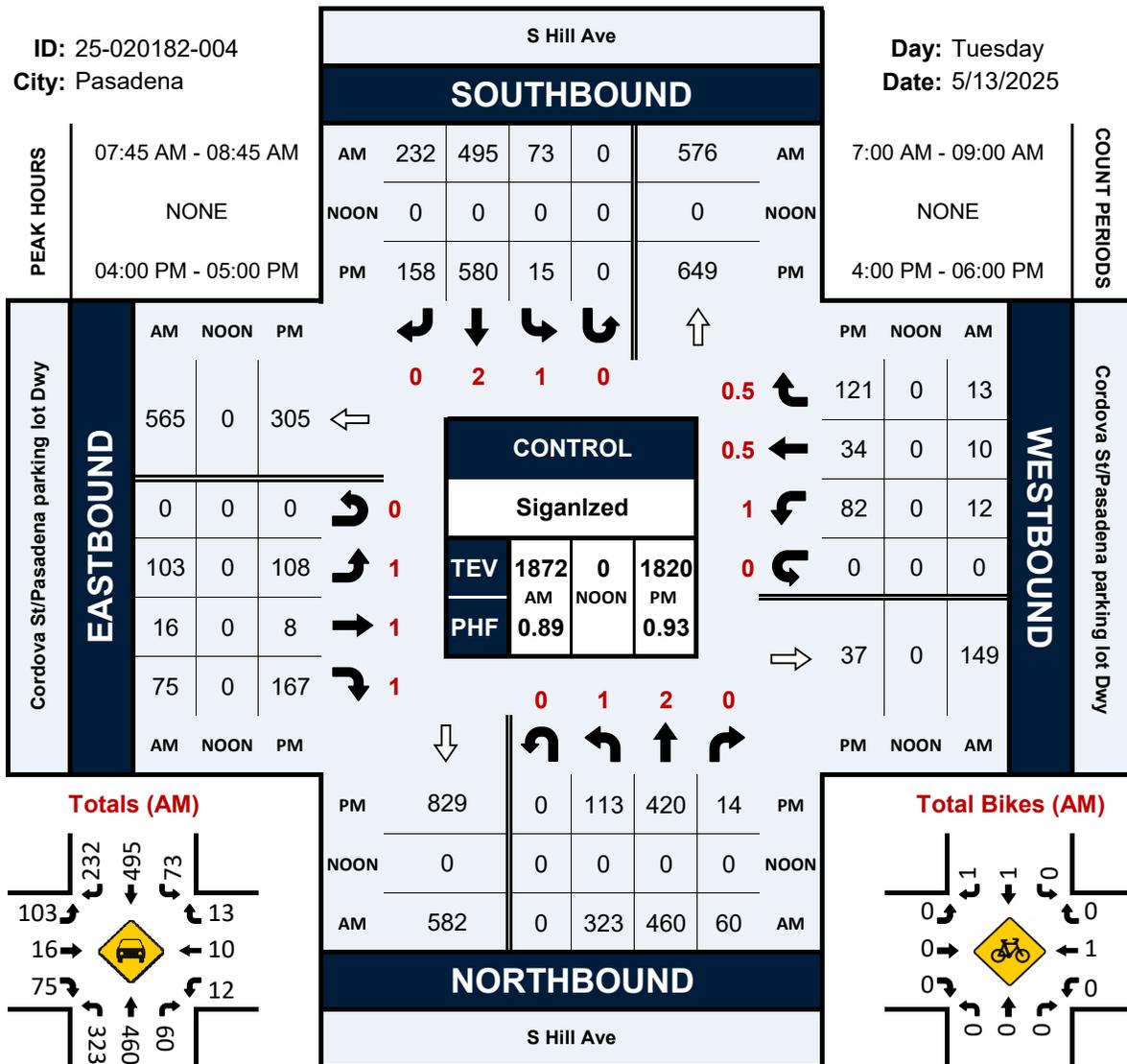


# S Hill Ave & Cordova St/Pasadena parking lot Dwy

## Peak Hour Turning Movement Count

ID: 25-020182-004  
City: Pasadena

Day: Tuesday  
Date: 5/13/2025



# INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Tue, Jun 3, 25

**LOCATION:**  
Pasadena  
NORTH & SOUTH:  
S Hill Ave  
EAST & WEST:  
E Del Mar Blvd

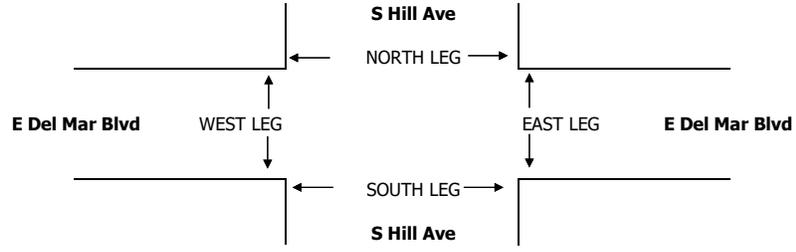
**PROJECT #:** SC5439  
**LOCATION #:** 3  
**CONTROL:** SIGNAL

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AM	▲	N														
PM	←	W														
MD	→	E														
OTHER	▼	S														
OTHER																

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	S Hill Ave			S Hill Ave			E Del Mar Blvd			E Del Mar Blvd			
	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 1	

U-TURNS				
NB 0	SB 0	EB 0	WB 0	TTL

<b>AM</b>	7:00 AM	7	26	5	14	23	25	8	46	5	1	115	36	311	0	0	0	0	0
	7:15 AM	12	48	3	19	34	21	10	51	4	2	159	51	414	0	0	0	0	0
	7:30 AM	20	74	1	23	53	37	11	66	2	3	197	83	570	0	0	0	0	0
	7:45 AM	41	114	5	34	67	48	23	102	8	3	217	57	719	0	0	0	0	0
	8:00 AM	22	98	7	36	83	57	28	108	6	2	197	54	698	0	0	0	0	0
	8:15 AM	28	114	4	32	40	44	25	112	4	3	194	68	668	0	0	0	0	0
	8:30 AM	24	122	14	41	60	40	32	105	6	3	206	64	717	0	0	0	0	0
	8:45 AM	28	134	11	41	43	38	21	92	5	4	178	80	675	0	0	0	0	0
	VOLUMES	182	730	50	240	403	310	158	682	40	21	1,463	493	4,772	0	0	0	0	0
	APPROACH %	19%	76%	5%	25%	42%	33%	18%	78%	5%	1%	74%	25%						
APP/DEPART	962	/	1,381	953	/	464	880	/	972	1,977	/	1,955	0						
BEGIN PEAK HR	7:45 AM																		
VOLUMES	115	448	30	143	250	189	108	427	24	11	814	243	2,802	0	0	0	0	0	
APPROACH %	19%	76%	5%	25%	43%	32%	19%	76%	4%	1%	76%	23%							
PEAK HR FACTOR	0.927													0.974					
APP/DEPART	593	/	799	582	/	285	559	/	600	1,068	/	1,118	0						
<b>PM</b>	4:00 PM	12	70	10	102	107	38	23	206	7	13	136	67	791	0	0	0	0	0
	4:15 PM	10	65	9	104	95	33	16	211	7	15	127	45	737	0	0	0	0	0
	4:30 PM	7	48	8	117	69	34	32	221	4	8	110	41	699	0	0	0	0	0
	4:45 PM	9	54	8	88	66	25	31	228	10	7	120	43	689	0	0	0	0	0
	5:00 PM	13	71	7	106	86	33	29	205	14	4	120	42	730	0	0	0	0	0
	5:15 PM	16	53	12	106	95	27	23	230	14	4	129	39	748	0	0	0	0	0
	5:30 PM	6	54	9	106	70	32	23	222	9	10	101	30	672	0	0	0	0	0
	5:45 PM	9	62	5	94	58	33	22	202	10	10	106	41	652	0	0	0	0	0
	VOLUMES	82	477	68	823	646	255	199	1,725	75	71	949	348	5,718	0	0	0	0	0
	APPROACH %	13%	76%	11%	48%	37%	15%	10%	86%	4%	5%	69%	25%						
APP/DEPART	627	/	1,024	1,724	/	792	1,999	/	2,616	1,368	/	1,286	0						
BEGIN PEAK HR	4:00 PM																		
VOLUMES	38	237	35	411	337	130	102	866	28	43	493	196	2,916	0	0	0	0	0	
APPROACH %	12%	76%	11%	47%	38%	15%	10%	87%	3%	6%	67%	27%							
PEAK HR FACTOR	0.842													0.922					
APP/DEPART	310	/	535	878	/	408	996	/	1,312	732	/	661	0						



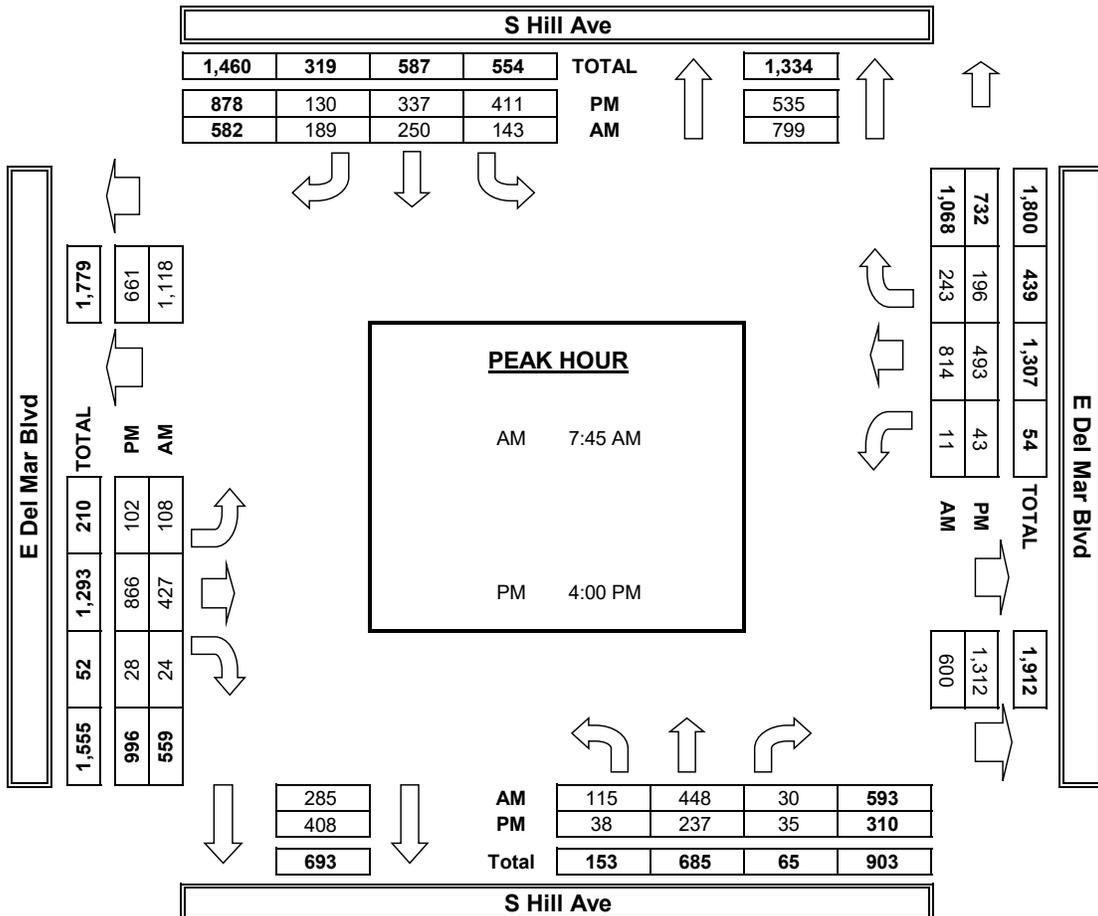
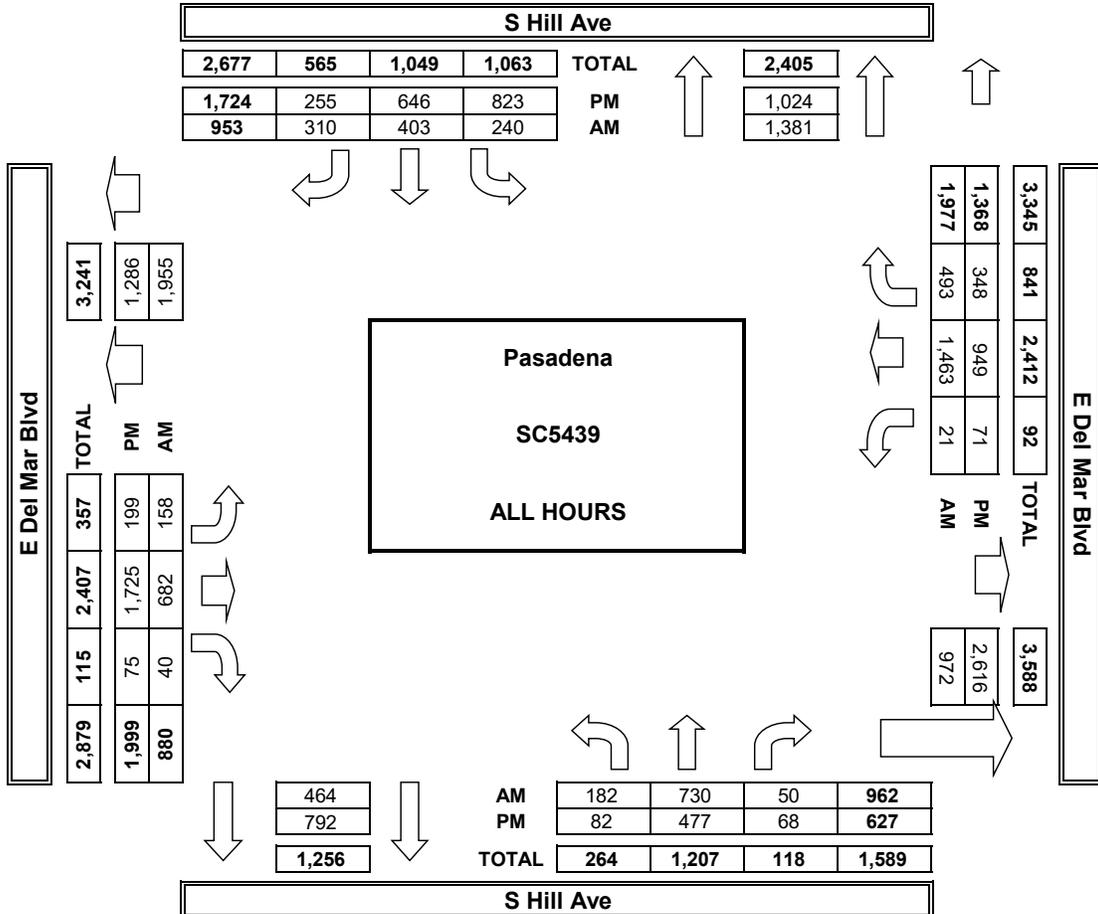
<b>AM</b>	7:00 AM	2	1	3	0	6
	7:15 AM	3	1	3	0	7
	7:30 AM	1	1	2	6	10
	7:45 AM	0	3	1	4	8
	8:00 AM	2	6	2	4	14
	8:15 AM	6	3	4	4	17
	8:30 AM	2	2	2	3	9
	8:45 AM	7	2	5	8	22
	TOTAL	23	19	22	29	93
	BEGIN PEAK HR	7:45 AM				
<b>PM</b>	4:00 PM	5	12	11	9	37
	4:15 PM	2	6	6	4	18
	4:30 PM	2	7	9	2	20
	4:45 PM	2	1	1	6	10
	5:00 PM	2	1	1	2	6
	5:15 PM	1	5	5	3	14
	5:30 PM	4	3	2	4	13
	5:45 PM	4	4	0	3	11
	TOTAL	22	39	35	33	129
	BEGIN PEAK HR	4:00 PM				

ALL PED + BIKE & SCOOTER				
N LEG	S LEG	E LEG	W LEG	TOTAL
2	1	3	0	6
3	1	3	0	7
1	1	2	6	10
0	3	1	4	8
2	6	2	4	14
6	3	4	4	17
2	2	2	3	9
7	2	5	8	22
23	19	22	29	93
7:45 AM				
5	12	11	9	37
2	6	6	4	18
2	7	9	2	20
2	1	1	6	10
2	1	1	2	6
1	5	5	3	14
4	3	2	4	13
4	4	0	3	11
22	39	35	33	129
4:00 PM				

PEDESTRIAN CROSSINGS				
N LEG	S LEG	E LEG	W LEG	TOTAL
2	1	3	0	6
3	1	3	0	7
1	0	1	4	6
0	2	1	4	7
1	4	2	3	10
6	3	4	3	16
2	2	2	3	9
7	2	5	7	21
22	15	21	24	82
9	11	9	13	42
5	11	11	8	35
1	6	5	4	16
2	7	9	2	20
2	1	1	6	10
2	0	1	2	5
1	5	2	3	11
4	3	2	4	13
4	4	0	3	11
21	37	31	32	121
10	25	26	20	81

BICYCLE & SCOOTER CROSSINGS				
NL	SL	EL	WL	TOTAL
0	0	0	0	0
0	0	0	0	0
0	1	1	2	4
0	1	0	0	1
1	2	0	1	4
0	0	0	1	1
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	2	4	1	8

**AimTD LLC**  
TURNING MOVEMENT COUNTS



# Appendix B.

# LOS Calculation

# Sheets



HCM 7th Signalized Intersection Summary  
 1: Wilson Ave & Green St

Existing Conditions (2025)  
 Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  							 		 	
Traffic Volume (veh/h)	19	200	48	0	0	0	0	186	48	41	243	0
Future Volume (veh/h)	19	200	48	0	0	0	0	186	48	41	243	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	20	211	51				0	196	51	43	256	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	169	1764	401				0	681	573	114	590	0
Arrive On Green	0.48	0.48	0.48				0.00	0.39	0.39	0.39	0.39	0.00
Sat Flow, veh/h	355	3697	841				0	1758	1480	142	1523	0
Grp Volume(v), veh/h	98	90	94				0	196	51	299	0	0
Grp Sat Flow(s),veh/h/ln	1740	1600	1553				0	1758	1480	1665	0	0
Q Serve(g_s), s	2.2	2.2	2.4				0.0	5.4	1.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.2	2.2	2.4				0.0	5.4	1.5	8.8	0.0	0.0
Prop In Lane	0.20		0.54				0.00		1.00	0.14		0.00
Lane Grp Cap(c), veh/h	830	763	741				0	681	573	703	0	0
V/C Ratio(X)	0.12	0.12	0.13				0.00	0.29	0.09	0.43	0.00	0.00
Avail Cap(c_a), veh/h	830	763	741				0	681	573	703	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.1	10.1	10.2				0.0	14.8	13.6	15.8	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.3	0.4				0.0	1.1	0.3	1.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.8	0.8				0.0	2.2	0.5	3.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.4	10.5	10.5				0.0	15.9	13.9	17.7	0.0	0.0
LnGrp LOS	B	B	B					B	B	B		
Approach Vol, veh/h		282						247			299	
Approach Delay, s/veh		10.5						15.5			17.7	
Approach LOS		B						B			B	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		38.3		31.7				31.7				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		33.4		27.1				27.1				
Max Q Clear Time (g_c+I1), s		4.4		10.8				7.4				
Green Ext Time (p_c), s		0.3		0.4				0.2				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			14.6									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
 2: Holliston Ave & Colorado Blvd

Existing Conditions (2025)  
 Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	242	21	69	605	2	14	10	49	4	10	3
Future Volume (veh/h)	6	242	21	69	605	2	14	10	49	4	10	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.94	0.98		0.96	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	0.90
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1758	1758	1758	1758	1758	1758
Adj Flow Rate, veh/h	6	252	11	72	630	1	15	10	30	4	10	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	149	823	36	274	867	1	257	176	451	250	587	112
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	699	3251	141	968	3421	5	320	283	723	311	940	179
Grp Volume(v), veh/h	6	129	134	72	308	323	55	0	0	16	0	0
Grp Sat Flow(s),veh/h/ln	699	1670	1722	968	1670	1757	1326	0	0	1429	0	0
Q Serve(g_s), s	0.6	5.0	5.1	5.2	13.5	13.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.1	5.0	5.1	10.3	13.5	13.5	1.2	0.0	0.0	0.3	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.00	0.27		0.55	0.25		0.12
Lane Grp Cap(c), veh/h	149	423	436	274	423	445	885	0	0	948	0	0
V/C Ratio(X)	0.04	0.30	0.31	0.26	0.73	0.73	0.06	0.00	0.00	0.02	0.00	0.00
Avail Cap(c_a), veh/h	183	503	519	321	503	529	885	0	0	948	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.87	0.91	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	33.8	24.2	24.2	28.3	27.3	27.3	5.9	0.0	0.0	5.7	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.4	0.4	0.4	3.7	3.6	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.0	2.0	1.2	5.6	5.9	0.4	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.9	24.6	24.6	28.8	31.1	30.9	6.0	0.0	0.0	5.7	0.0	0.0
LnGrp LOS	C	C	C	C	C	C	A			A		
Approach Vol, veh/h		269			703			55				16
Approach Delay, s/veh		24.8			30.8			6.0				5.7
Approach LOS		C			C			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.8		25.2		54.8		25.2				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		46.1		24.1		46.1		24.1				
Max Q Clear Time (g_c+I1), s		3.2		16.1		2.3		15.5				
Green Ext Time (p_c), s		0.3		0.9		0.1		2.8				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				27.5								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary  
 3: Hill Ave & Colorado Blvd

Existing Conditions (2025)  
 Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	160	24	140	522	159	62	554	110	144	641	153
Future Volume (veh/h)	98	160	24	140	522	159	62	554	110	144	641	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.96	1.00		0.98	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	104	170	7	149	555	87	66	589	34	153	682	143
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	380	1150	492	552	1132	484	237	924	404	314	795	167
Arrive On Green	0.10	0.34	0.34	0.10	0.34	0.34	0.08	0.28	0.28	0.10	0.29	0.29
Sat Flow, veh/h	1581	3340	1429	1581	3340	1429	1581	3340	1461	1581	2731	572
Grp Volume(v), veh/h	104	170	7	149	555	87	66	589	34	153	417	408
Grp Sat Flow(s),veh/h/ln	1581	1670	1429	1581	1670	1429	1581	1670	1461	1581	1670	1633
Q Serve(g_s), s	3.9	3.5	0.3	5.9	13.2	4.3	2.8	15.5	1.7	6.7	23.6	23.6
Cycle Q Clear(g_c), s	3.9	3.5	0.3	5.9	13.2	4.3	2.8	15.5	1.7	6.7	23.6	23.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	380	1150	492	552	1132	484	237	924	404	314	486	476
V/C Ratio(X)	0.27	0.15	0.01	0.27	0.49	0.18	0.28	0.64	0.08	0.49	0.86	0.86
Avail Cap(c_a), veh/h	403	1150	492	583	1132	484	307	1039	454	361	519	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	22.6	21.6	17.5	26.2	23.3	24.1	31.8	26.8	23.1	33.5	33.5
Incr Delay (d2), s/veh	0.4	0.3	0.1	0.3	1.5	0.8	0.6	1.7	0.2	1.2	14.3	14.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.4	0.1	2.1	5.4	1.5	1.1	6.4	0.6	2.5	11.3	11.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.0	22.9	21.6	17.8	27.7	24.1	24.7	33.5	27.0	24.3	47.8	48.2
LnGrp LOS	B	C	C	B	C	C	C	C	C	C	D	D
Approach Vol, veh/h		281			791			689			978	
Approach Delay, s/veh		21.1			25.5			32.3			44.3	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	39.3	14.1	32.6	14.6	38.8	12.6	34.0				
Change Period (Y+Rc), s	4.2	4.9	4.2	4.9	4.2	4.9	4.2	4.9				
Max Green Setting (Gmax), s	11.8	26.1	12.8	31.1	11.8	26.1	12.8	31.1				
Max Q Clear Time (g_c+I1), s	7.9	5.5	8.7	17.5	5.9	15.2	4.8	25.6				
Green Ext Time (p_c), s	0.1	1.7	0.1	5.6	0.1	4.8	0.1	3.5				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			33.4									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary  
4: Holliston Ave & Green St

Existing Conditions (2025)  
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 				
Traffic Volume (veh/h)	34	188	69	0	0	0	0	53	29	13	87	0
Future Volume (veh/h)	34	188	69	0	0	0	0	53	29	13	87	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	0.90	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	40	219	59				0	62	1	15	101	0
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	500	2725	703				0	148	2	58	150	0
Arrive On Green	0.80	0.80	0.80				0.00	0.10	0.10	0.10	0.10	0.00
Sat Flow, veh/h	626	3411	880				0	1552	25	131	1575	0
Grp Volume(v), veh/h	110	101	107				0	0	63	116	0	0
Grp Sat Flow(s),veh/h/ln	1727	1600	1590				0	0	1577	1705	0	0
Q Serve(g_s), s	1.2	1.2	1.3				0.0	0.0	3.4	2.5	0.0	0.0
Cycle Q Clear(g_c), s	1.2	1.2	1.3				0.0	0.0	3.4	5.9	0.0	0.0
Prop In Lane	0.36		0.55				0.00		0.02	0.13		0.00
Lane Grp Cap(c), veh/h	1380	1278	1271				0	0	150	208	0	0
V/C Ratio(X)	0.08	0.08	0.08				0.00	0.00	0.42	0.56	0.00	0.00
Avail Cap(c_a), veh/h	1380	1278	1271				0	0	493	570	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.00	1.00	0.98	0.00	0.00
Uniform Delay (d), s/veh	1.9	1.9	1.9				0.0	0.0	38.4	39.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.1	0.1				0.0	0.0	1.9	2.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.3	0.3				0.0	0.0	1.4	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	2.1	2.1	2.1				0.0	0.0	40.2	41.7	0.0	0.0
LnGrp LOS	A	A	A						D	D		
Approach Vol, veh/h		318						63			116	
Approach Delay, s/veh		2.1						40.2			41.7	
Approach LOS		A						D			D	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		76.8		13.2				13.2				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		52.4		28.1				28.1				
Max Q Clear Time (g_c+I1), s		3.3		5.4				7.9				
Green Ext Time (p_c), s		2.2		0.3				0.6				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			16.2									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
 5: Hill Ave & Green St/Pasadena City College Parking Lot

Existing Conditions (2025)  
 Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	16	61	21	0	35	0	580	42	85	716	0
Future Volume (veh/h)	123	16	61	21	0	35	0	580	42	85	716	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	0	1758	0	1758	1758	1660	1758	0
Adj Flow Rate, veh/h	156	0	48	22	0	37	0	611	44	89	754	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	798	0	363	0	0	0	0	1395	100	399	1475	0
Arrive On Green	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.44	0.44	0.44	0.44	0.00
Sat Flow, veh/h	3162	0	1440		0		0	3246	227	689	3428	0
Grp Volume(v), veh/h	156	0	48		0.0		0	323	332	89	754	0
Grp Sat Flow(s),veh/h/ln	1581	0	1440				0	1670	1715	689	1670	0
Q Serve(g_s), s	1.5	0.0	1.0				0.0	5.2	5.2	4.0	6.3	0.0
Cycle Q Clear(g_c), s	1.5	0.0	1.0				0.0	5.2	5.2	9.1	6.3	0.0
Prop In Lane	1.00		1.00				0.00		0.13	1.00		0.00
Lane Grp Cap(c), veh/h	798	0	363				0	738	757	399	1475	0
V/C Ratio(X)	0.20	0.00	0.13				0.00	0.44	0.44	0.22	0.51	0.00
Avail Cap(c_a), veh/h	2132	0	971				0	1299	1334	630	2599	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.3	0.0	11.1				0.0	7.5	7.5	10.6	7.8	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.2				0.0	0.4	0.4	0.3	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.3				0.0	1.3	1.4	0.5	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.5	0.0	11.3				0.0	7.9	7.9	10.9	8.0	0.0
LnGrp LOS	B		B					A	A	B	A	
Approach Vol, veh/h		204						655			843	
Approach Delay, s/veh		11.4						7.9			8.3	
Approach LOS		B						A			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		20.9		17.6		20.9						
Change Period (Y+Rc), s		3.9		7.9		3.9						
Max Green Setting (Gmax), s		30.0		26.0		30.0						
Max Q Clear Time (g_c+I1), s		7.2		3.5		11.1						
Green Ext Time (p_c), s		4.2		0.7		5.9						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			8.5									
HCM 7th LOS			A									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

HCM 7th Signalized Intersection Summary  
 6: Hill Ave & Cordova St/Pasadena City College Parking Lot

Existing Conditions (2025)  
 Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	16	75	12	10	13	323	460	60	73	495	232
Future Volume (veh/h)	103	16	75	12	10	13	323	460	60	73	495	232
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.98	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	116	18	8	13	11	2	363	517	58	82	556	192
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	247	250	209	242	205	37	546	2254	252	517	1427	491
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.11	0.74	0.74	0.59	0.59	0.59
Sat Flow, veh/h	1231	1758	1474	1217	1441	262	1581	3026	338	742	2419	832
Grp Volume(v), veh/h	116	18	8	13	0	13	363	285	290	82	383	365
Grp Sat Flow(s),veh/h/ln	1231	1758	1474	1217	0	1703	1581	1670	1695	742	1670	1581
Q Serve(g_s), s	8.1	0.8	0.4	0.8	0.0	0.6	7.5	4.7	4.8	4.6	11.0	11.1
Cycle Q Clear(g_c), s	8.7	0.8	0.4	1.6	0.0	0.6	7.5	4.7	4.8	4.6	11.0	11.1
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.20	1.00		0.53
Lane Grp Cap(c), veh/h	247	250	209	242	0	242	546	1244	1262	517	985	933
V/C Ratio(X)	0.47	0.07	0.04	0.05	0.00	0.05	0.66	0.23	0.23	0.16	0.39	0.39
Avail Cap(c_a), veh/h	429	510	427	422	0	494	581	1244	1262	517	985	933
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.80	0.80	0.80	0.91	0.91	0.91
Uniform Delay (d), s/veh	37.1	33.5	33.3	34.2	0.0	33.4	6.8	3.5	3.5	8.5	9.8	9.8
Incr Delay (d2), s/veh	2.0	0.2	0.1	0.1	0.0	0.1	1.9	0.3	0.3	0.6	1.1	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.4	0.2	0.3	0.0	0.3	2.2	1.3	1.3	0.8	4.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.1	33.6	33.4	34.3	0.0	33.5	8.7	3.9	3.9	9.1	10.9	11.0
LnGrp LOS	D	C	C	C		C	A	A	A	A	B	B
Approach Vol, veh/h		142			26			938			830	
Approach Delay, s/veh		38.1			33.9			5.7			10.7	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		71.9		18.1	13.9	58.0		18.1				
Change Period (Y+Rc), s		4.9		5.3	4.2	4.9		5.3				
Max Green Setting (Gmax), s		53.7		26.1	11.7	37.8		26.1				
Max Q Clear Time (g_c+I1), s		6.8		10.7	9.5	13.1		3.6				
Green Ext Time (p_c), s		5.9		0.6	0.2	8.2		0.1				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			10.6									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
7: Hill Ave & Del Mar Blvd

Existing Conditions (2025)  
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	427	24	11	814	243	115	448	30	143	250	189
Future Volume (veh/h)	108	427	24	11	814	243	115	448	30	143	250	189
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		0.97	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	111	440	22	11	839	70	119	462	27	147	258	74
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	166	1095	55	166	1131	492	296	737	43	348	1023	286
Arrive On Green	0.10	0.34	0.34	0.10	0.34	0.34	0.23	0.23	0.23	0.12	0.40	0.40
Sat Flow, veh/h	1581	3233	161	1581	3340	1453	920	3201	187	1581	2561	717
Grp Volume(v), veh/h	111	227	235	11	839	70	119	240	249	147	166	166
Grp Sat Flow(s),veh/h/ln	1581	1670	1725	1581	1670	1453	920	1670	1718	1581	1670	1608
Q Serve(g_s), s	5.8	8.9	9.0	0.5	19.0	2.9	9.8	11.1	11.2	5.5	5.7	5.9
Cycle Q Clear(g_c), s	5.8	8.9	9.0	0.5	19.0	2.9	9.8	11.1	11.2	5.5	5.7	5.9
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.11	1.00		0.45
Lane Grp Cap(c), veh/h	166	565	584	166	1131	492	296	385	396	348	667	642
V/C Ratio(X)	0.67	0.40	0.40	0.07	0.74	0.14	0.40	0.63	0.63	0.42	0.25	0.26
Avail Cap(c_a), veh/h	271	794	820	271	1588	691	410	592	608	435	667	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	21.7	21.7	34.6	25.1	19.7	29.2	29.7	29.7	20.0	17.2	17.3
Incr Delay (d2), s/veh	4.6	0.7	0.6	0.2	1.6	0.2	1.3	2.4	2.3	1.2	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	3.4	3.6	0.2	7.3	1.0	2.2	4.6	4.8	2.1	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.6	22.4	22.4	34.8	26.6	19.9	30.5	32.1	32.1	21.2	17.4	17.5
LnGrp LOS	D	C	C	C	C	B	C	C	C	C	B	B
Approach Vol, veh/h		573			920			608			479	
Approach Delay, s/veh		26.1			26.2			31.7			18.6	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	33.6	14.5	24.3	13.5	33.6		38.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	14.7	40.8	14.7	30.4	14.7	40.8		30.4				
Max Q Clear Time (g_c+I1), s	7.8	21.0	7.5	13.2	2.5	11.0		7.9				
Green Ext Time (p_c), s	0.1	8.0	0.3	4.6	0.0	4.1		1.9				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				26.1								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary  
 1: Wilson Ave & Green St

Existing Conditions (2025)  
 Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  							 		 	
Traffic Volume (veh/h)	68	531	50	0	0	0	0	246	33	30	161	0
Future Volume (veh/h)	68	531	50	0	0	0	0	246	33	30	161	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	76	590	56				0	273	37	33	179	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	259	2006	189				0	655	534	117	554	0
Arrive On Green	0.49	0.49	0.49				0.00	0.37	0.37	0.37	0.37	0.00
Sat Flow, veh/h	527	4082	384				0	1758	1432	154	1486	0
Grp Volume(v), veh/h	250	230	242				0	273	37	212	0	0
Grp Sat Flow(s),veh/h/ln	1732	1600	1662				0	1758	1432	1640	0	0
Q Serve(g_s), s	6.0	6.0	6.1				0.0	8.1	1.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.0	6.0	6.1				0.0	8.1	1.2	6.0	0.0	0.0
Prop In Lane	0.30		0.23				0.00		1.00	0.16		0.00
Lane Grp Cap(c), veh/h	851	786	817				0	655	534	671	0	0
V/C Ratio(X)	0.29	0.29	0.30				0.00	0.42	0.07	0.32	0.00	0.00
Avail Cap(c_a), veh/h	851	786	817				0	655	534	671	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.6	10.6	10.6				0.0	16.3	14.1	15.7	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.9	0.9				0.0	1.9	0.3	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	2.1	2.3				0.0	3.4	0.4	2.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.5	11.5	11.5				0.0	18.2	14.4	16.9	0.0	0.0
LnGrp LOS	B	B	B					B	B	B		
Approach Vol, veh/h		722						310			212	
Approach Delay, s/veh		11.5						17.8			16.9	
Approach LOS		B						B			B	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		39.3		30.7				30.7				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		34.4		26.1				26.1				
Max Q Clear Time (g_c+I1), s		8.1		8.0				10.1				
Green Ext Time (p_c), s		0.9		0.2				0.3				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			14.0									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
 2: Holliston Ave & Colorado Blvd

Existing Conditions (2025)  
 Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	565	32	59	562	3	27	27	84	18	10	9
Future Volume (veh/h)	17	565	32	59	562	3	27	27	84	18	10	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.97		0.90	0.97		0.91	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	0.90
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1758	1758	1758
Adj Flow Rate, veh/h	18	582	28	61	579	2	28	28	69	19	10	5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	197	944	45	186	1000	3	203	203	433	463	233	108
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.58	0.58	0.58	0.58	0.58	0.58
Sat Flow, veh/h	718	3224	155	701	3413	12	253	347	740	673	398	185
Grp Volume(v), veh/h	18	301	309	61	283	298	125	0	0	34	0	0
Grp Sat Flow(s),veh/h/ln	718	1670	1709	701	1670	1754	1341	0	0	1255	0	0
Q Serve(g_s), s	1.8	12.4	12.5	6.6	11.6	11.6	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.3	12.4	12.5	19.1	11.6	11.6	3.2	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.01	0.22		0.55	0.56		0.15
Lane Grp Cap(c), veh/h	197	489	501	186	489	514	839	0	0	804	0	0
V/C Ratio(X)	0.09	0.62	0.62	0.33	0.58	0.58	0.15	0.00	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	203	503	515	192	503	529	839	0	0	804	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.8	24.4	24.4	32.6	24.1	24.1	7.6	0.0	0.0	7.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	2.1	2.1	0.9	1.5	1.4	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.0	5.1	1.1	4.6	4.8	1.0	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.0	26.5	26.6	33.6	25.5	25.5	7.9	0.0	0.0	7.2	0.0	0.0
LnGrp LOS	C	C	C	C	C	C	A			A		
Approach Vol, veh/h		628			642			125				34
Approach Delay, s/veh		26.6			26.3			7.9				7.2
Approach LOS		C			C			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.7		28.3		51.7		28.3				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		46.1		24.1		46.1		24.1				
Max Q Clear Time (g_c+I1), s		5.2		15.3		2.8		21.1				
Green Ext Time (p_c), s		0.8		2.6		0.2		1.2				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				24.4								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary  
3: Hill Ave & Colorado Blvd

Existing Conditions (2025)  
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	456	64	117	418	197	59	644	278	121	343	118
Future Volume (veh/h)	149	456	64	117	418	197	59	644	278	121	343	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.95	0.99		0.95	0.99		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	154	470	15	121	431	107	61	664	133	125	354	88
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	436	1206	513	429	1166	494	338	881	376	274	735	180
Arrive On Green	0.11	0.36	0.36	0.10	0.35	0.35	0.08	0.26	0.26	0.10	0.28	0.28
Sat Flow, veh/h	1581	3340	1421	1581	3340	1415	1581	3340	1426	1581	2634	644
Grp Volume(v), veh/h	154	470	15	121	431	107	61	664	133	125	222	220
Grp Sat Flow(s),veh/h/ln	1581	1670	1421	1581	1670	1415	1581	1670	1426	1581	1670	1609
Q Serve(g_s), s	5.9	10.5	0.7	4.6	9.6	5.3	2.6	18.3	7.6	5.5	11.1	11.4
Cycle Q Clear(g_c), s	5.9	10.5	0.7	4.6	9.6	5.3	2.6	18.3	7.6	5.5	11.1	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	436	1206	513	429	1166	494	338	881	376	274	466	449
V/C Ratio(X)	0.35	0.39	0.03	0.28	0.37	0.22	0.18	0.75	0.35	0.46	0.48	0.49
Avail Cap(c_a), veh/h	451	1206	513	463	1166	494	411	1039	444	323	519	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.62	0.62	0.62	1.00	1.00	1.00	0.77	0.77	0.77	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	23.8	20.6	17.2	24.3	22.9	22.8	33.8	29.9	24.3	30.0	30.1
Incr Delay (d2), s/veh	0.3	0.6	0.1	0.4	0.9	1.0	0.2	2.9	0.9	1.2	1.6	1.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.2	0.2	1.7	3.9	1.9	1.0	7.6	2.7	2.1	4.6	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.2	24.4	20.7	17.5	25.2	23.9	23.0	36.7	30.8	25.5	31.6	31.9
LnGrp LOS	B	C	C	B	C	C	C	D	C	C	C	C
Approach Vol, veh/h		639			659			858			567	
Approach Delay, s/veh		22.5			23.6			34.8			30.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.9	41.0	13.9	31.3	15.0	39.8	12.4	32.8				
Change Period (Y+Rc), s	4.2	4.9	4.2	4.9	4.2	4.9	4.2	4.9				
Max Green Setting (Gmax), s	11.8	26.1	12.8	31.1	11.8	26.1	12.8	31.1				
Max Q Clear Time (g_c+I1), s	6.6	12.5	7.5	20.3	7.9	11.6	4.6	13.4				
Green Ext Time (p_c), s	0.1	4.4	0.1	5.8	0.1	4.8	0.1	4.4				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			28.3									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary  
 4: Holliston Ave & Green St

Existing Conditions (2025)  
 Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 				
Traffic Volume (veh/h)	58	519	39	0	0	0	0	53	28	18	64	0
Future Volume (veh/h)	58	519	39	0	0	0	0	53	28	18	64	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99				1.00		0.96	0.97		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	0.90	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	60	535	34				0	55	5	19	66	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	384	3423	216				0	137	12	70	134	0
Arrive On Green	0.80	0.80	0.80				0.00	0.10	0.10	0.10	0.10	0.00
Sat Flow, veh/h	481	4287	271				0	1424	129	223	1393	0
Grp Volume(v), veh/h	216	199	214				0	0	60	85	0	0
Grp Sat Flow(s),veh/h/ln	1734	1600	1706				0	0	1553	1616	0	0
Q Serve(g_s), s	2.6	2.6	2.6				0.0	0.0	3.3	1.2	0.0	0.0
Cycle Q Clear(g_c), s	2.6	2.6	2.6				0.0	0.0	3.3	4.5	0.0	0.0
Prop In Lane	0.28		0.16				0.00		0.08	0.22		0.00
Lane Grp Cap(c), veh/h	1384	1277	1362				0	0	149	204	0	0
V/C Ratio(X)	0.16	0.16	0.16				0.00	0.00	0.40	0.42	0.00	0.00
Avail Cap(c_a), veh/h	1384	1277	1362				0	0	312	373	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96				0.00	0.00	1.00	0.93	0.00	0.00
Uniform Delay (d), s/veh	2.1	2.1	2.1				0.0	0.0	38.3	38.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.2				0.0	0.0	1.7	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.6	0.7				0.0	0.0	1.3	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	2.3	2.3	2.3				0.0	0.0	40.0	40.0	0.0	0.0
LnGrp LOS	A	A	A						D	D		
Approach Vol, veh/h		629						60			85	
Approach Delay, s/veh		2.3						40.0			40.0	
Approach LOS		A						D			D	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		76.8		13.2				13.2				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		62.4		18.1				18.1				
Max Q Clear Time (g_c+I1), s		4.6		5.3				6.5				
Green Ext Time (p_c), s		4.6		0.2				0.3				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			9.4									
HCM 7th LOS			A									

HCM 7th Signalized Intersection Summary  
 5: Hill Ave & Green St/Pasadena City College Parking Lot

Existing Conditions (2025)  
 Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	276	6	205	65	0	54	0	676	28	18	531	0
Future Volume (veh/h)	276	6	205	65	0	54	0	676	28	18	531	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	0	1758	0	1758	1758	1660	1758	0
Adj Flow Rate, veh/h	372	0	151	71	0	59	0	735	30	20	577	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	954	0	436	0	0	0	0	1234	50	318	1262	0
Arrive On Green	0.30	0.00	0.30	0.00	0.00	0.00	0.00	0.38	0.38	0.38	0.38	0.00
Sat Flow, veh/h	3162	0	1445		0		0	3353	133	622	3428	0
Grp Volume(v), veh/h	372	0	151		0.0		0	376	389	20	577	0
Grp Sat Flow(s),veh/h/ln	1581	0	1445				0	1670	1728	622	1670	0
Q Serve(g_s), s	3.4	0.0	3.0				0.0	6.7	6.7	1.0	4.8	0.0
Cycle Q Clear(g_c), s	3.4	0.0	3.0				0.0	6.7	6.7	7.6	4.8	0.0
Prop In Lane	1.00		1.00				0.00		0.08	1.00		0.00
Lane Grp Cap(c), veh/h	954	0	436				0	631	653	318	1262	0
V/C Ratio(X)	0.39	0.00	0.35				0.00	0.60	0.60	0.06	0.46	0.00
Avail Cap(c_a), veh/h	2231	0	1020				0	1360	1407	589	2719	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.2	0.0	10.0				0.0	9.2	9.2	12.3	8.6	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.5				0.0	0.9	0.9	0.1	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.8				0.0	1.8	1.9	0.1	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.4	0.0	10.5				0.0	10.1	10.1	12.4	8.9	0.0
LnGrp LOS	B		B					B	B	B	A	
Approach Vol, veh/h		523						765			597	
Approach Delay, s/veh		10.5						10.1			9.0	
Approach LOS		B						B			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		17.8		19.0		17.8						
Change Period (Y+Rc), s		3.9		7.9		3.9						
Max Green Setting (Gmax), s		30.0		26.0		30.0						
Max Q Clear Time (g_c+I1), s		8.7		5.4		9.6						
Green Ext Time (p_c), s		4.9		1.9		4.1						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			9.8									
HCM 7th LOS			A									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

HCM 7th Signalized Intersection Summary  
 6: Hill Ave & Cordova St/Pasadena City College Parking Lot

Existing Conditions (2025)  
 Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	8	167	82	34	121	113	420	14	15	580	158
Future Volume (veh/h)	108	8	167	82	34	121	113	420	14	15	580	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	116	9	20	88	37	14	122	452	13	16	624	147
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	227	262	222	257	181	68	524	2446	70	571	1599	376
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.10	0.74	0.74	0.60	0.60	0.60
Sat Flow, veh/h	1202	1758	1490	1226	1215	460	1581	3315	95	823	2683	631
Grp Volume(v), veh/h	116	9	20	88	0	51	122	227	238	16	388	383
Grp Sat Flow(s),veh/h/ln	1202	1758	1490	1226	0	1675	1581	1670	1741	823	1670	1644
Q Serve(g_s), s	8.4	0.4	1.0	6.0	0.0	2.4	2.2	3.7	3.7	0.7	11.0	11.0
Cycle Q Clear(g_c), s	10.8	0.4	1.0	6.3	0.0	2.4	2.2	3.7	3.7	0.7	11.0	11.0
Prop In Lane	1.00		1.00	1.00		0.27	1.00		0.05	1.00		0.38
Lane Grp Cap(c), veh/h	227	262	222	257	0	249	524	1232	1284	571	995	980
V/C Ratio(X)	0.51	0.03	0.09	0.34	0.00	0.20	0.23	0.18	0.19	0.03	0.39	0.39
Avail Cap(c_a), veh/h	396	510	432	430	0	486	579	1232	1284	571	995	980
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.88	0.88	0.88	0.89	0.89	0.89
Uniform Delay (d), s/veh	38.4	32.8	33.0	35.5	0.0	33.6	5.2	3.6	3.6	7.5	9.6	9.6
Incr Delay (d2), s/veh	2.5	0.1	0.2	0.8	0.0	0.4	0.1	0.3	0.3	0.1	1.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.2	0.4	1.8	0.0	1.0	0.6	1.1	1.1	0.1	3.9	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.9	32.8	33.3	36.3	0.0	34.0	5.3	3.9	3.9	7.6	10.6	10.6
LnGrp LOS	D	C	C	D		C	A	A	A	A	B	B
Approach Vol, veh/h		145			139			587			787	
Approach Delay, s/veh		39.4			35.4			4.2			10.5	
Approach LOS		D			D			A			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		71.3		18.7	12.8	58.5		18.7				
Change Period (Y+Rc), s		4.9		5.3	4.2	4.9		5.3				
Max Green Setting (Gmax), s		53.7		26.1	11.7	37.8		26.1				
Max Q Clear Time (g_c+I1), s		5.7		12.8	4.2	13.0		8.3				
Green Ext Time (p_c), s		4.6		0.6	0.1	7.6		0.5				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			12.9									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
7: Hill Ave & Del Mar Blvd

Existing Conditions (2025)  
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	866	28	43	493	196	38	237	35	411	337	130
Future Volume (veh/h)	102	866	28	43	493	196	38	237	35	411	337	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	0.98		0.95	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	111	941	28	47	536	59	41	258	26	447	366	102
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	153	1174	35	153	1185	511	235	599	60	443	1035	284
Arrive On Green	0.10	0.35	0.35	0.10	0.35	0.35	0.20	0.20	0.20	0.16	0.40	0.40
Sat Flow, veh/h	1581	3308	98	1581	3340	1440	804	3050	304	1581	2569	705
Grp Volume(v), veh/h	111	475	494	47	536	59	41	140	144	447	236	232
Grp Sat Flow(s),veh/h/ln	1581	1670	1736	1581	1670	1440	804	1670	1684	1581	1670	1603
Q Serve(g_s), s	6.3	23.8	23.8	2.6	11.5	2.6	4.0	6.8	7.0	14.7	9.1	9.4
Cycle Q Clear(g_c), s	6.3	23.8	23.8	2.6	11.5	2.6	4.0	6.8	7.0	14.7	9.1	9.4
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.18	1.00		0.44
Lane Grp Cap(c), veh/h	153	593	616	153	1185	511	235	328	330	443	673	646
V/C Ratio(X)	0.72	0.80	0.80	0.31	0.45	0.12	0.17	0.43	0.44	1.01	0.35	0.36
Avail Cap(c_a), veh/h	250	733	762	250	1467	632	341	546	551	443	673	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	27.0	27.0	39.1	23.0	20.2	31.6	32.8	32.8	29.4	19.3	19.4
Incr Delay (d2), s/veh	6.4	5.9	5.7	1.1	0.4	0.1	0.5	1.3	1.3	45.0	0.3	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	10.0	10.3	1.0	4.4	0.9	0.8	2.8	2.9	9.2	3.5	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.1	32.9	32.7	40.2	23.4	20.3	32.1	34.0	34.1	74.4	19.6	19.7
LnGrp LOS	D	C	C	D	C	C	C	C	C	F	B	B
Approach Vol, veh/h		1080			642			325			915	
Approach Delay, s/veh		34.3			24.4			33.8			46.4	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	37.5	19.2	22.7	13.5	37.5		41.9				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	14.7	40.8	14.7	30.4	14.7	40.8		30.4				
Max Q Clear Time (g_c+I1), s	8.3	13.5	16.7	9.0	4.6	25.8		11.4				
Green Ext Time (p_c), s	0.1	5.6	0.0	2.6	0.0	7.1		2.7				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			35.8									
HCM 7th LOS			D									

HCM 7th Signalized Intersection Summary

Existing Plus Project Conditions (2025)

1: Wilson Ave & Green St

Timing Plan: AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕↕						↑	↗		↖	
Traffic Volume (veh/h)	19	212	48	0	0	0	0	186	52	45	243	0
Future Volume (veh/h)	19	212	48	0	0	0	0	186	52	45	243	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	20	223	51				0	196	55	47	256	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	162	1789	387				0	681	573	121	579	0
Arrive On Green	0.48	0.48	0.48				0.00	0.39	0.39	0.39	0.39	0.00
Sat Flow, veh/h	340	3750	810				0	1758	1480	158	1495	0
Grp Volume(v), veh/h	102	93	98				0	196	55	303	0	0
Grp Sat Flow(s),veh/h/ln	1741	1600	1560				0	1758	1480	1653	0	0
Q Serve(g_s), s	2.3	2.3	2.5				0.0	5.4	1.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.3	2.3	2.5				0.0	5.4	1.7	8.9	0.0	0.0
Prop In Lane	0.20		0.52				0.00		1.00	0.16		0.00
Lane Grp Cap(c), veh/h	831	763	744				0	681	573	699	0	0
V/C Ratio(X)	0.12	0.12	0.13				0.00	0.29	0.10	0.43	0.00	0.00
Avail Cap(c_a), veh/h	831	763	744				0	681	573	699	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.2	10.2	10.2				0.0	14.8	13.7	15.9	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.3	0.4				0.0	1.1	0.3	2.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.8	0.9				0.0	2.2	0.6	3.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.5	10.5	10.6				0.0	15.9	14.0	17.8	0.0	0.0
LnGrp LOS	B	B	B					B	B	B		
Approach Vol, veh/h		294						251			303	
Approach Delay, s/veh		10.5						15.5			17.8	
Approach LOS		B						B			B	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		38.3		31.7				31.7				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		33.4		27.1				27.1				
Max Q Clear Time (g_c+I1), s		4.5		10.9				7.4				
Green Ext Time (p_c), s		0.4		0.4				0.2				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			14.6									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
2: Holliston Ave & Colorado Blvd

Existing Plus Project Conditions (2025)  
Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	242	27	77	606	3	14	10	49	4	14	3
Future Volume (veh/h)	6	242	27	77	606	3	14	10	49	4	14	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.94	0.98		0.96	0.99		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	0.90
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1758	1758	1758	1758	1758	1758
Adj Flow Rate, veh/h	6	252	17	80	631	2	15	10	31	4	15	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	149	803	54	272	867	3	252	173	457	197	685	87
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	698	3162	212	963	3415	11	313	278	733	229	1098	140
Grp Volume(v), veh/h	6	132	137	80	309	324	56	0	0	21	0	0
Grp Sat Flow(s),veh/h/ln	698	1670	1704	963	1670	1755	1324	0	0	1468	0	0
Q Serve(g_s), s	0.6	5.1	5.2	5.9	13.5	13.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.2	5.1	5.2	11.1	13.5	13.5	1.2	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.01	0.27		0.55	0.19		0.10
Lane Grp Cap(c), veh/h	149	424	433	272	424	446	883	0	0	969	0	0
V/C Ratio(X)	0.04	0.31	0.32	0.29	0.73	0.73	0.06	0.00	0.00	0.02	0.00	0.00
Avail Cap(c_a), veh/h	182	503	513	317	503	529	883	0	0	969	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.87	0.92	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	33.8	24.2	24.2	28.7	27.3	27.3	5.9	0.0	0.0	5.7	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.4	0.4	0.5	3.8	3.6	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.0	2.1	1.4	5.6	5.9	0.4	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.9	24.6	24.6	29.2	31.1	30.9	6.0	0.0	0.0	5.8	0.0	0.0
LnGrp LOS	C	C	C	C	C	C	A			A		
Approach Vol, veh/h		275			713			56			21	
Approach Delay, s/veh		24.8			30.8			6.0			5.8	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.8		25.2		54.8		25.2				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		46.1		24.1		46.1		24.1				
Max Q Clear Time (g_c+I1), s		3.2		16.2		2.4		15.5				
Green Ext Time (p_c), s		0.3		0.9		0.1		2.8				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				27.5								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary  
3: Hill Ave & Colorado Blvd

Existing Plus Project Conditions (2025)  
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	160	24	149	522	159	64	558	112	144	653	161
Future Volume (veh/h)	98	160	24	149	522	159	64	558	112	144	653	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.96	1.00		0.98	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	104	170	7	159	555	88	68	594	35	153	695	151
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	376	1134	485	547	1117	478	236	939	411	316	799	174
Arrive On Green	0.10	0.34	0.34	0.10	0.33	0.33	0.08	0.28	0.28	0.10	0.29	0.29
Sat Flow, veh/h	1581	3340	1429	1581	3340	1428	1581	3340	1461	1581	2711	589
Grp Volume(v), veh/h	104	170	7	159	555	88	68	594	35	153	428	418
Grp Sat Flow(s),veh/h/ln	1581	1670	1429	1581	1670	1428	1581	1670	1461	1581	1670	1630
Q Serve(g_s), s	4.0	3.5	0.3	6.3	13.3	4.4	2.8	15.5	1.8	6.6	24.3	24.3
Cycle Q Clear(g_c), s	4.0	3.5	0.3	6.3	13.3	4.4	2.8	15.5	1.8	6.6	24.3	24.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	376	1134	485	547	1117	478	236	939	411	316	492	481
V/C Ratio(X)	0.28	0.15	0.01	0.29	0.50	0.18	0.29	0.63	0.09	0.48	0.87	0.87
Avail Cap(c_a), veh/h	399	1134	485	578	1117	478	304	1039	454	363	519	507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	23.0	21.9	17.9	26.6	23.6	24.0	31.4	26.5	22.8	33.4	33.4
Incr Delay (d2), s/veh	0.4	0.3	0.1	0.3	1.6	0.8	0.6	1.7	0.2	1.1	15.5	16.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.4	0.1	2.3	5.4	1.6	1.1	6.4	0.6	2.5	11.7	11.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.3	23.3	22.0	18.2	28.1	24.5	24.6	33.1	26.6	24.0	49.0	49.4
LnGrp LOS	B	C	C	B	C	C	C	C	C	C	D	D
Approach Vol, veh/h		281			802			697			999	
Approach Delay, s/veh		21.4			25.8			31.9			45.3	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.1	38.8	14.1	33.0	14.6	38.3	12.7	34.4				
Change Period (Y+Rc), s	4.2	4.9	4.2	4.9	4.2	4.9	4.2	4.9				
Max Green Setting (Gmax), s	11.8	26.1	12.8	31.1	11.8	26.1	12.8	31.1				
Max Q Clear Time (g_c+I1), s	8.3	5.5	8.6	17.5	6.0	15.3	4.8	26.3				
Green Ext Time (p_c), s	0.1	1.7	0.1	5.6	0.1	4.8	0.1	3.2				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			33.9									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary  
 4: Holliston Ave & Green St

Existing Plus Project Conditions (2025)  
 Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 				
Traffic Volume (veh/h)	34	188	89	0	0	0	0	53	29	13	105	0
Future Volume (veh/h)	34	188	89	0	0	0	0	53	29	13	105	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	0.90	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	40	219	81				0	62	3	15	122	0
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	459	2502	872				0	162	8	56	174	0
Arrive On Green	0.79	0.79	0.79				0.00	0.11	0.11	0.11	0.11	0.00
Sat Flow, veh/h	584	3182	1109				0	1496	72	106	1609	0
Grp Volume(v), veh/h	118	109	113				0	0	65	137	0	0
Grp Sat Flow(s),veh/h/ln	1729	1600	1546				0	0	1569	1715	0	0
Q Serve(g_s), s	1.4	1.4	1.5				0.0	0.0	3.5	2.8	0.0	0.0
Cycle Q Clear(g_c), s	1.4	1.4	1.5				0.0	0.0	3.5	6.9	0.0	0.0
Prop In Lane	0.34		0.72				0.00		0.05	0.11		0.00
Lane Grp Cap(c), veh/h	1359	1258	1216				0	0	170	230	0	0
V/C Ratio(X)	0.09	0.09	0.09				0.00	0.00	0.38	0.60	0.00	0.00
Avail Cap(c_a), veh/h	1359	1258	1216				0	0	490	573	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.00	1.00	0.97	0.00	0.00
Uniform Delay (d), s/veh	2.2	2.2	2.2				0.0	0.0	37.3	38.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.1	0.2				0.0	0.0	1.4	2.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.4	0.4				0.0	0.0	1.4	3.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	2.3	2.3	2.4				0.0	0.0	38.8	41.2	0.0	0.0
LnGrp LOS	A	A	A						D	D		
Approach Vol, veh/h		340						65			137	
Approach Delay, s/veh		2.3						38.8			41.2	
Approach LOS		A						D			D	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		75.7		14.3				14.3				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		52.4		28.1				28.1				
Max Q Clear Time (g_c+I1), s		3.5		5.5				8.9				
Green Ext Time (p_c), s		2.3		0.3				0.7				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			16.5									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
 5: Hill Ave & Green St/Pasadena City College Parking Lot

Existing Plus Project Conditions (2025)  
 Timing Plan: AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	16	70	21	0	35	0	580	42	85	737	0
Future Volume (veh/h)	131	16	70	21	0	35	0	580	42	85	737	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	0	1758	0	1758	1758	1660	1758	0
Adj Flow Rate, veh/h	168	0	55	22	0	37	0	611	44	89	776	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	806	0	367	0	0	0	0	1398	101	397	1479	0
Arrive On Green	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.44	0.44	0.44	0.44	0.00
Sat Flow, veh/h	3162	0	1440		0		0	3246	227	689	3428	0
Grp Volume(v), veh/h	168	0	55		0.0		0	323	332	89	776	0
Grp Sat Flow(s),veh/h/ln	1581	0	1440				0	1670	1715	689	1670	0
Q Serve(g_s), s	1.6	0.0	1.2				0.0	5.2	5.2	4.0	6.6	0.0
Cycle Q Clear(g_c), s	1.6	0.0	1.2				0.0	5.2	5.2	9.2	6.6	0.0
Prop In Lane	1.00		1.00				0.00		0.13	1.00		0.00
Lane Grp Cap(c), veh/h	806	0	367				0	739	759	397	1479	0
V/C Ratio(X)	0.21	0.00	0.15				0.00	0.44	0.44	0.22	0.52	0.00
Avail Cap(c_a), veh/h	2106	0	959				0	1283	1318	622	2567	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.4	0.0	11.3				0.0	7.5	7.5	10.7	7.9	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.2				0.0	0.4	0.4	0.3	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.3				0.0	1.3	1.4	0.5	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.6	0.0	11.5				0.0	7.9	7.9	11.0	8.2	0.0
LnGrp LOS	B		B					A	A	B	A	
Approach Vol, veh/h		223						655			865	
Approach Delay, s/veh		11.5						7.9			8.5	
Approach LOS		B						A			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		21.2		17.9		21.2						
Change Period (Y+Rc), s		3.9		7.9		3.9						
Max Green Setting (Gmax), s		30.0		26.0		30.0						
Max Q Clear Time (g_c+I1), s		7.2		3.6		11.2						
Green Ext Time (p_c), s		4.2		0.7		6.1						

Intersection Summary		
HCM 7th Control Delay, s/veh		8.7
HCM 7th LOS		A

Notes  
 User approved volume balancing among the lanes for turning movement.

HCM 7th Signalized Intersection Summary

Existing Plus Project Conditions (2025)

6: Hill Ave & Cordova St/Pasadena City College Parking Lot

Timing Plan: AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	16	75	12	10	13	335	460	60	73	501	256
Future Volume (veh/h)	103	16	75	12	10	13	335	460	60	73	501	256
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.98	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	116	18	5	13	11	2	376	517	58	82	563	217
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	246	249	209	242	204	37	536	2254	252	515	1372	527
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.11	0.74	0.74	0.59	0.59	0.59
Sat Flow, veh/h	1231	1758	1474	1220	1441	262	1581	3026	338	742	2338	898
Grp Volume(v), veh/h	116	18	5	13	0	13	376	285	290	82	402	378
Grp Sat Flow(s),veh/h/ln	1231	1758	1474	1220	0	1703	1581	1670	1695	742	1670	1566
Q Serve(g_s), s	8.1	0.8	0.3	0.8	0.0	0.6	7.8	4.7	4.7	4.6	11.8	11.8
Cycle Q Clear(g_c), s	8.7	0.8	0.3	1.6	0.0	0.6	7.8	4.7	4.7	4.6	11.8	11.8
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.20	1.00		0.57
Lane Grp Cap(c), veh/h	246	249	209	242	0	241	536	1244	1262	515	980	919
V/C Ratio(X)	0.47	0.07	0.02	0.05	0.00	0.05	0.70	0.23	0.23	0.16	0.41	0.41
Avail Cap(c_a), veh/h	429	510	427	423	0	494	565	1244	1262	515	980	919
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.80	0.80	0.80	0.91	0.91	0.91
Uniform Delay (d), s/veh	37.2	33.5	33.3	34.2	0.0	33.4	7.4	3.5	3.5	8.6	10.1	10.1
Incr Delay (d2), s/veh	2.0	0.2	0.1	0.1	0.0	0.1	2.7	0.3	0.3	0.6	1.2	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.4	0.1	0.3	0.0	0.3	2.4	1.3	1.3	0.8	4.3	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.1	33.7	33.3	34.3	0.0	33.5	10.1	3.9	3.9	9.2	11.3	11.4
LnGrp LOS	D	C	C	C		C	B	A	A	A	B	B
Approach Vol, veh/h		139			26			951			862	
Approach Delay, s/veh		38.2			33.9			6.3			11.1	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		71.9		18.1	14.2	57.7		18.1				
Change Period (Y+Rc), s		4.9		5.3	4.2	4.9		5.3				
Max Green Setting (Gmax), s		53.7		26.1	11.7	37.8		26.1				
Max Q Clear Time (g_c+I1), s		6.7		10.7	9.8	13.8		3.6				
Green Ext Time (p_c), s		5.9		0.6	0.2	8.5		0.1				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				11.0								
HCM 7th LOS				B								

HCM 7th Signalized Intersection Summary  
7: Hill Ave & Del Mar Blvd

Existing Plus Project Conditions (2025)  
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	427	24	11	818	243	119	460	30	144	253	191
Future Volume (veh/h)	108	427	24	11	818	243	119	460	30	144	253	191
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		0.97	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	111	440	22	11	843	79	123	474	27	148	261	75
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	165	1097	55	165	1133	493	297	746	42	345	1025	287
Arrive On Green	0.10	0.34	0.34	0.10	0.34	0.34	0.23	0.23	0.23	0.12	0.40	0.40
Sat Flow, veh/h	1581	3233	161	1581	3340	1453	917	3206	182	1581	2560	718
Grp Volume(v), veh/h	111	227	235	11	843	79	123	246	255	148	168	168
Grp Sat Flow(s),veh/h/ln	1581	1670	1725	1581	1670	1453	917	1670	1719	1581	1670	1608
Q Serve(g_s), s	5.8	9.0	9.0	0.5	19.3	3.3	10.3	11.5	11.5	5.6	5.8	6.0
Cycle Q Clear(g_c), s	5.8	9.0	9.0	0.5	19.3	3.3	10.3	11.5	11.5	5.6	5.8	6.0
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.11	1.00		0.45
Lane Grp Cap(c), veh/h	165	567	585	165	1133	493	297	388	400	345	669	644
V/C Ratio(X)	0.67	0.40	0.40	0.07	0.74	0.16	0.41	0.63	0.64	0.43	0.25	0.26
Avail Cap(c_a), veh/h	269	788	814	269	1577	686	406	587	604	431	669	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	21.8	21.8	34.9	25.2	19.9	29.4	29.9	29.9	20.1	17.3	17.4
Incr Delay (d2), s/veh	4.7	0.7	0.6	0.2	1.6	0.2	1.3	2.4	2.4	1.2	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	3.5	3.6	0.2	7.5	1.1	2.3	4.7	4.9	2.1	2.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.0	22.5	22.5	35.1	26.8	20.2	30.7	32.3	32.3	21.3	17.5	17.6
LnGrp LOS	D	C	C	D	C	C	C	C	C	C	B	B
Approach Vol, veh/h		573			933			624			484	
Approach Delay, s/veh		26.3			26.4			32.0			18.7	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	33.8	14.5	24.6	13.5	33.8		39.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	14.7	40.8	14.7	30.4	14.7	40.8		30.4				
Max Q Clear Time (g_c+I1), s	7.8	21.3	7.6	13.5	2.5	11.0		8.0				
Green Ext Time (p_c), s	0.1	8.1	0.3	4.7	0.0	4.1		2.0				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			26.3									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary  
 1: Wilson Ave & Green St

Existing Plus Project Conditions (2025)  
 Timing Plan: PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔↔						↑	↗		↖	
Traffic Volume (veh/h)	68	533	50	0	0	0	0	246	34	31	161	0
Future Volume (veh/h)	68	533	50	0	0	0	0	246	34	31	161	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	76	592	56				0	273	38	34	179	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	258	2008	188				0	655	534	119	550	0
Arrive On Green	0.49	0.49	0.49				0.00	0.37	0.37	0.37	0.37	0.00
Sat Flow, veh/h	525	4085	383				0	1758	1432	160	1476	0
Grp Volume(v), veh/h	251	231	243				0	273	38	213	0	0
Grp Sat Flow(s),veh/h/ln	1732	1600	1662				0	1758	1432	1636	0	0
Q Serve(g_s), s	6.0	6.0	6.1				0.0	8.1	1.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.0	6.0	6.1				0.0	8.1	1.2	6.1	0.0	0.0
Prop In Lane	0.30		0.23				0.00		1.00	0.16		0.00
Lane Grp Cap(c), veh/h	851	786	817				0	655	534	669	0	0
V/C Ratio(X)	0.29	0.29	0.30				0.00	0.42	0.07	0.32	0.00	0.00
Avail Cap(c_a), veh/h	851	786	817				0	655	534	669	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.6	10.6	10.6				0.0	16.3	14.1	15.7	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.9	0.9				0.0	1.9	0.3	1.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	2.1	2.3				0.0	3.4	0.4	2.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.5	11.5	11.5				0.0	18.2	14.4	16.9	0.0	0.0
LnGrp LOS	B	B	B					B	B	B		
Approach Vol, veh/h		724						311			213	
Approach Delay, s/veh		11.5						17.8			16.9	
Approach LOS		B						B			B	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		39.3		30.7				30.7				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		34.4		26.1				26.1				
Max Q Clear Time (g_c+I1), s		8.1		8.1				10.1				
Green Ext Time (p_c), s		0.9		0.2				0.3				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			14.0									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
 2: Holliston Ave & Colorado Blvd

Existing Plus Project Conditions (2025)  
 Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	565	33	60	568	7	27	27	84	18	11	9
Future Volume (veh/h)	17	565	33	60	568	7	27	27	84	18	11	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.97		0.90	0.97		0.91	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	0.90
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1758	1758	1758	1758	1758	1758
Adj Flow Rate, veh/h	18	582	28	62	586	6	28	28	66	19	11	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	193	946	45	186	992	10	208	207	424	441	244	123
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.58	0.58	0.58	0.58	0.58	0.58
Sat Flow, veh/h	712	3224	155	701	3383	35	261	354	725	637	418	211
Grp Volume(v), veh/h	18	301	309	62	289	303	122	0	0	36	0	0
Grp Sat Flow(s),veh/h/ln	712	1670	1709	701	1670	1748	1340	0	0	1265	0	0
Q Serve(g_s), s	1.8	12.4	12.5	6.7	11.8	11.9	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.6	12.4	12.5	19.2	11.8	11.9	3.1	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.02	0.23		0.54	0.53		0.17
Lane Grp Cap(c), veh/h	193	490	501	186	490	513	838	0	0	808	0	0
V/C Ratio(X)	0.09	0.61	0.62	0.33	0.59	0.59	0.15	0.00	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	199	503	515	192	503	527	838	0	0	808	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	30.0	24.4	24.4	32.7	24.2	24.2	7.6	0.0	0.0	7.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	2.1	2.1	1.0	1.6	1.5	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.0	5.1	1.2	4.7	4.9	1.0	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.2	26.5	26.5	33.6	25.8	25.7	7.9	0.0	0.0	7.2	0.0	0.0
LnGrp LOS	C	C	C	C	C	C	A			A		
Approach Vol, veh/h		628			654			122				36
Approach Delay, s/veh		26.6			26.5			7.9				7.2
Approach LOS		C			C			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.6		28.4		51.6		28.4				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		46.1		24.1		46.1		24.1				
Max Q Clear Time (g_c+I1), s		5.1		15.6		2.8		21.2				
Green Ext Time (p_c), s		0.8		2.5		0.2		1.2				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				24.5								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary  
3: Hill Ave & Colorado Blvd

Existing Plus Project Conditions (2025)  
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	456	64	118	418	197	69	663	287	121	345	119
Future Volume (veh/h)	149	456	64	118	418	197	69	663	287	121	345	119
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.95	0.99		0.95	0.99		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	154	470	19	122	431	108	71	684	142	125	356	89
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	433	1193	507	425	1154	488	343	893	381	271	732	180
Arrive On Green	0.11	0.36	0.36	0.10	0.35	0.35	0.09	0.27	0.27	0.10	0.28	0.28
Sat Flow, veh/h	1581	3340	1421	1581	3340	1414	1581	3340	1427	1581	2631	647
Grp Volume(v), veh/h	154	470	19	122	431	108	71	684	142	125	224	221
Grp Sat Flow(s),veh/h/ln	1581	1670	1421	1581	1670	1414	1581	1670	1427	1581	1670	1608
Q Serve(g_s), s	5.9	10.5	0.9	4.7	9.7	5.4	3.0	18.9	8.1	5.5	11.2	11.5
Cycle Q Clear(g_c), s	5.9	10.5	0.9	4.7	9.7	5.4	3.0	18.9	8.1	5.5	11.2	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	433	1193	507	425	1154	488	343	893	381	271	464	447
V/C Ratio(X)	0.36	0.39	0.04	0.29	0.37	0.22	0.21	0.77	0.37	0.46	0.48	0.49
Avail Cap(c_a), veh/h	448	1193	507	459	1154	488	409	1039	444	320	519	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.62	0.62	0.62	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	24.0	20.9	17.4	24.6	23.2	22.5	33.8	29.8	24.2	30.1	30.2
Incr Delay (d2), s/veh	0.3	0.6	0.1	0.4	0.9	1.0	0.2	3.1	1.0	1.2	1.7	1.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.2	0.3	1.7	3.9	1.9	1.1	7.9	2.9	2.1	4.6	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.4	24.6	21.0	17.8	25.5	24.2	22.7	36.9	30.8	25.4	31.8	32.0
LnGrp LOS	B	C	C	B	C	C	C	D	C	C	C	C
Approach Vol, veh/h		643			661			897			570	
Approach Delay, s/veh		22.8			23.9			34.8			30.5	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.9	40.6	13.9	31.6	15.0	39.4	12.8	32.7				
Change Period (Y+Rc), s	4.2	4.9	4.2	4.9	4.2	4.9	4.2	4.9				
Max Green Setting (Gmax), s	11.8	26.1	12.8	31.1	11.8	26.1	12.8	31.1				
Max Q Clear Time (g_c+I1), s	6.7	12.5	7.5	20.9	7.9	11.7	5.0	13.5				
Green Ext Time (p_c), s	0.1	4.4	0.1	5.7	0.1	4.8	0.1	4.5				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			28.5									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary  
4: Holliston Ave & Green St

Existing Plus Project Conditions (2025)  
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 				
Traffic Volume (veh/h)	58	519	43	0	0	0	0	53	28	18	67	0
Future Volume (veh/h)	58	519	43	0	0	0	0	53	28	18	67	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99				1.00		0.96	0.97		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	0.90	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	60	535	38				0	55	5	19	69	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	381	3397	240				0	137	12	69	135	0
Arrive On Green	0.80	0.80	0.80				0.00	0.10	0.10	0.10	0.10	0.00
Sat Flow, veh/h	477	4256	301				0	1424	129	216	1404	0
Grp Volume(v), veh/h	218	200	215				0	0	60	88	0	0
Grp Sat Flow(s),veh/h/ln	1734	1600	1700				0	0	1553	1620	0	0
Q Serve(g_s), s	2.6	2.6	2.6				0.0	0.0	3.3	1.4	0.0	0.0
Cycle Q Clear(g_c), s	2.6	2.6	2.6				0.0	0.0	3.3	4.6	0.0	0.0
Prop In Lane	0.28		0.18				0.00		0.08	0.22		0.00
Lane Grp Cap(c), veh/h	1384	1277	1357				0	0	149	204	0	0
V/C Ratio(X)	0.16	0.16	0.16				0.00	0.00	0.40	0.43	0.00	0.00
Avail Cap(c_a), veh/h	1384	1277	1357				0	0	312	373	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96				0.00	0.00	1.00	0.93	0.00	0.00
Uniform Delay (d), s/veh	2.1	2.1	2.1				0.0	0.0	38.2	38.8	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.2				0.0	0.0	1.7	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.6	0.7				0.0	0.0	1.3	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	2.3	2.3	2.3				0.0	0.0	40.0	40.1	0.0	0.0
LnGrp LOS	A	A	A						D	D		
Approach Vol, veh/h		633						60			88	
Approach Delay, s/veh		2.3						40.0			40.1	
Approach LOS		A						D			D	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		76.7		13.3				13.3				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		62.4		18.1				18.1				
Max Q Clear Time (g_c+I1), s		4.6		5.3				6.6				
Green Ext Time (p_c), s		4.6		0.2				0.3				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			9.5									
HCM 7th LOS			A									

HCM 7th Signalized Intersection Summary  
 5: Hill Ave & Green St/Pasadena City College Parking Lot

Existing Plus Project Conditions (2025)  
 Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	314	6	244	65	0	54	0	676	28	18	534	0
Future Volume (veh/h)	314	6	244	65	0	54	0	676	28	18	534	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	0	1758	0	1758	1758	1660	1758	0
Adj Flow Rate, veh/h	426	0	179	71	0	59	0	735	30	20	580	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	956	0	437	0	0	0	0	1233	50	318	1262	0
Arrive On Green	0.30	0.00	0.30	0.00	0.00	0.00	0.00	0.38	0.38	0.38	0.38	0.00
Sat Flow, veh/h	3162	0	1445		0		0	3353	133	622	3428	0
Grp Volume(v), veh/h	426	0	179		0.0		0	376	389	20	580	0
Grp Sat Flow(s),veh/h/ln	1581	0	1445				0	1670	1728	622	1670	0
Q Serve(g_s), s	4.0	0.0	3.6				0.0	6.7	6.7	1.0	4.8	0.0
Cycle Q Clear(g_c), s	4.0	0.0	3.6				0.0	6.7	6.7	7.7	4.8	0.0
Prop In Lane	1.00		1.00				0.00		0.08	1.00		0.00
Lane Grp Cap(c), veh/h	956	0	437				0	631	653	318	1262	0
V/C Ratio(X)	0.45	0.00	0.41				0.00	0.60	0.60	0.06	0.46	0.00
Avail Cap(c_a), veh/h	2230	0	1019				0	1359	1406	589	2717	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.4	0.0	10.2				0.0	9.2	9.2	12.3	8.6	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.6				0.0	0.9	0.9	0.1	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.0				0.0	1.8	1.9	0.1	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.7	0.0	10.9				0.0	10.1	10.1	12.4	8.9	0.0
LnGrp LOS	B		B					B	B	B	A	
Approach Vol, veh/h		605						765			600	
Approach Delay, s/veh		10.8						10.1			9.0	
Approach LOS		B						B			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		17.8		19.0		17.8						
Change Period (Y+Rc), s		3.9		7.9		3.9						
Max Green Setting (Gmax), s		30.0		26.0		30.0						
Max Q Clear Time (g_c+I1), s		8.7		6.0		9.7						
Green Ext Time (p_c), s		4.9		2.2		4.1						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			10.0									
HCM 7th LOS			A									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

HCM 7th Signalized Intersection Summary

Existing Plus Project Conditions (2025)

6: Hill Ave & Cordova St/Pasadena City College Parking Lot

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	8	167	82	34	121	115	420	14	15	607	173
Future Volume (veh/h)	108	8	167	82	34	121	115	420	14	15	607	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	116	9	21	88	37	15	124	452	13	16	653	162
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	227	263	223	258	178	72	506	2444	70	570	1578	391
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.10	0.74	0.74	0.59	0.59	0.59
Sat Flow, veh/h	1201	1758	1490	1225	1189	482	1581	3315	95	823	2652	657
Grp Volume(v), veh/h	116	9	21	88	0	52	124	227	238	16	411	404
Grp Sat Flow(s),veh/h/ln	1201	1758	1490	1225	0	1671	1581	1670	1741	823	1670	1640
Q Serve(g_s), s	8.4	0.4	1.1	6.0	0.0	2.5	2.2	3.7	3.7	0.7	11.9	11.9
Cycle Q Clear(g_c), s	10.9	0.4	1.1	6.4	0.0	2.5	2.2	3.7	3.7	0.7	11.9	11.9
Prop In Lane	1.00		1.00	1.00		0.29	1.00		0.05	1.00		0.40
Lane Grp Cap(c), veh/h	227	263	223	258	0	250	506	1231	1283	570	994	975
V/C Ratio(X)	0.51	0.03	0.09	0.34	0.00	0.21	0.24	0.18	0.19	0.03	0.41	0.41
Avail Cap(c_a), veh/h	395	510	432	430	0	485	561	1231	1283	570	994	975
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.88	0.88	0.88	0.89	0.89	0.89
Uniform Delay (d), s/veh	38.4	32.7	33.0	35.4	0.0	33.6	5.4	3.6	3.6	7.5	9.8	9.8
Incr Delay (d2), s/veh	2.5	0.1	0.3	0.8	0.0	0.4	0.2	0.3	0.3	0.1	1.1	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.2	0.4	1.8	0.0	1.0	0.6	1.1	1.1	0.1	4.3	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.9	32.8	33.3	36.2	0.0	34.0	5.6	3.9	3.9	7.6	10.9	11.0
LnGrp LOS	D	C	C	D		C	A	A	A	A	B	B
Approach Vol, veh/h		146			140			589			831	
Approach Delay, s/veh		39.3			35.4			4.2			10.9	
Approach LOS		D			D			A			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		71.2		18.8	12.8	58.4		18.8				
Change Period (Y+Rc), s		4.9		5.3	4.2	4.9		5.3				
Max Green Setting (Gmax), s		53.7		26.1	11.7	37.8		26.1				
Max Q Clear Time (g_c+I1), s		5.7		12.9	4.2	13.9		8.4				
Green Ext Time (p_c), s		4.6		0.6	0.1	8.0		0.5				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				13.0								
HCM 7th LOS				B								

HCM 7th Signalized Intersection Summary  
7: Hill Ave & Del Mar Blvd

Existing Plus Project Conditions (2025)  
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	866	28	43	494	196	39	239	35	415	352	138
Future Volume (veh/h)	102	866	28	43	494	196	39	239	35	415	352	138
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	0.98		0.95	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	111	941	28	47	537	60	42	260	26	451	383	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	153	1174	35	153	1185	511	232	600	59	443	1027	291
Arrive On Green	0.10	0.35	0.35	0.10	0.35	0.35	0.20	0.20	0.20	0.16	0.40	0.40
Sat Flow, veh/h	1581	3308	98	1581	3340	1440	786	3052	302	1581	2548	721
Grp Volume(v), veh/h	111	475	494	47	537	60	42	141	145	451	249	244
Grp Sat Flow(s),veh/h/ln	1581	1670	1736	1581	1670	1440	786	1670	1684	1581	1670	1600
Q Serve(g_s), s	6.3	23.9	23.9	2.6	11.5	2.6	4.2	6.9	7.0	14.7	9.7	10.0
Cycle Q Clear(g_c), s	6.3	23.9	23.9	2.6	11.5	2.6	4.2	6.9	7.0	14.7	9.7	10.0
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.18	1.00		0.45
Lane Grp Cap(c), veh/h	153	593	616	153	1185	511	232	328	331	443	673	645
V/C Ratio(X)	0.73	0.80	0.80	0.31	0.45	0.12	0.18	0.43	0.44	1.02	0.37	0.38
Avail Cap(c_a), veh/h	250	733	762	250	1466	632	335	546	551	443	673	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	27.0	27.0	39.1	23.1	20.2	31.7	32.8	32.8	29.4	19.5	19.5
Incr Delay (d2), s/veh	6.4	5.9	5.7	1.1	0.4	0.1	0.5	1.3	1.3	47.7	0.3	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	10.0	10.3	1.0	4.4	0.9	0.8	2.9	3.0	9.6	3.7	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.2	33.0	32.7	40.2	23.4	20.3	32.2	34.0	34.1	77.1	19.8	19.9
LnGrp LOS	D	C	C	D	C	C	C	C	C	F	B	B
Approach Vol, veh/h		1080			644			328			944	
Approach Delay, s/veh		34.3			24.4			33.8			47.2	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	37.5	19.2	22.8	13.5	37.5		42.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	14.7	40.8	14.7	30.4	14.7	40.8		30.4				
Max Q Clear Time (g_c+I1), s	8.3	13.5	16.7	9.0	4.6	25.9		12.0				
Green Ext Time (p_c), s	0.1	5.6	0.0	2.6	0.0	7.1		2.9				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			36.2									
HCM 7th LOS			D									

HCM 7th Signalized Intersection Summary  
 1: Wilson Ave & Green St

Future Baseline Conditions (2027)  
 Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  							 		 	
Traffic Volume (veh/h)	19	203	49	0	0	0	0	189	49	42	246	0
Future Volume (veh/h)	19	203	49	0	0	0	0	189	49	42	246	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	20	214	52				0	199	52	44	259	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	167	1764	403				0	681	573	115	588	0
Arrive On Green	0.48	0.48	0.48				0.00	0.39	0.39	0.39	0.39	0.00
Sat Flow, veh/h	350	3697	845				0	1758	1480	144	1519	0
Grp Volume(v), veh/h	100	91	95				0	199	52	303	0	0
Grp Sat Flow(s),veh/h/ln	1740	1600	1552				0	1758	1480	1663	0	0
Q Serve(g_s), s	2.2	2.2	2.4				0.0	5.5	1.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.2	2.2	2.4				0.0	5.5	1.6	8.9	0.0	0.0
Prop In Lane	0.20		0.54				0.00		1.00	0.15		0.00
Lane Grp Cap(c), veh/h	830	763	740				0	681	573	703	0	0
V/C Ratio(X)	0.12	0.12	0.13				0.00	0.29	0.09	0.43	0.00	0.00
Avail Cap(c_a), veh/h	830	763	740				0	681	573	703	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.1	10.1	10.2				0.0	14.8	13.6	15.9	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.3	0.4				0.0	1.1	0.3	1.9	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.8	0.8				0.0	2.3	0.5	3.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.4	10.5	10.6				0.0	15.9	13.9	17.8	0.0	0.0
LnGrp LOS	B	B	B					B	B	B		
Approach Vol, veh/h		286						251			303	
Approach Delay, s/veh		10.5						15.5			17.8	
Approach LOS		B						B			B	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		38.3		31.7				31.7				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		33.4		27.1				27.1				
Max Q Clear Time (g_c+I1), s		4.4		10.9				7.5				
Green Ext Time (p_c), s		0.3		0.4				0.2				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			14.6									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
2: Holliston Ave & Colorado Blvd

Future Baseline Conditions (2027)  
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	245	21	70	613	2	14	10	50	4	10	3
Future Volume (veh/h)	6	245	21	70	613	2	14	10	50	4	10	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.94	0.98		0.96	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	0.90
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1758	1758	1758	1758	1758	1758
Adj Flow Rate, veh/h	6	255	14	73	639	2	15	10	31	4	10	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	148	819	45	273	871	3	252	173	457	250	585	111
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	693	3208	175	963	3415	11	313	279	734	311	940	179
Grp Volume(v), veh/h	6	132	137	73	312	329	56	0	0	16	0	0
Grp Sat Flow(s),veh/h/ln	693	1670	1713	963	1670	1755	1326	0	0	1429	0	0
Q Serve(g_s), s	0.6	5.1	5.2	5.3	13.7	13.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.4	5.1	5.2	10.5	13.7	13.7	1.2	0.0	0.0	0.3	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.01	0.27		0.55	0.25		0.12
Lane Grp Cap(c), veh/h	148	426	437	273	426	448	882	0	0	946	0	0
V/C Ratio(X)	0.04	0.31	0.31	0.27	0.73	0.73	0.06	0.00	0.00	0.02	0.00	0.00
Avail Cap(c_a), veh/h	180	503	516	318	503	529	882	0	0	946	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.87	0.90	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	33.9	24.1	24.1	28.4	27.3	27.3	5.9	0.0	0.0	5.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.4	0.4	0.5	4.0	3.8	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.0	2.1	1.2	5.7	6.0	0.4	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.0	24.5	24.5	28.8	31.3	31.1	6.1	0.0	0.0	5.8	0.0	0.0
LnGrp LOS	C	C	C	C	C	C	A			A		
Approach Vol, veh/h		275			714			56			16	
Approach Delay, s/veh		24.7			30.9			6.1			5.8	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.7		25.3		54.7		25.3				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		46.1		24.1		46.1		24.1				
Max Q Clear Time (g_c+I1), s		3.2		16.4		2.3		15.7				
Green Ext Time (p_c), s		0.3		0.9		0.1		2.8				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				27.6								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary  
3: Hill Ave & Colorado Blvd

Future Baseline Conditions (2027)  
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	162	24	142	529	161	63	562	112	146	650	155
Future Volume (veh/h)	99	162	24	142	529	161	63	562	112	146	650	155
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.96	1.00		0.98	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	105	172	7	151	563	90	67	598	35	155	691	144
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	376	1143	489	549	1124	481	237	931	407	313	801	167
Arrive On Green	0.10	0.34	0.34	0.10	0.34	0.34	0.08	0.28	0.28	0.10	0.29	0.29
Sat Flow, veh/h	1581	3340	1429	1581	3340	1428	1581	3340	1461	1581	2735	569
Grp Volume(v), veh/h	105	172	7	151	563	90	67	598	35	155	422	413
Grp Sat Flow(s),veh/h/ln	1581	1670	1429	1581	1670	1428	1581	1670	1461	1581	1670	1634
Q Serve(g_s), s	4.0	3.6	0.3	6.0	13.4	4.5	2.8	15.7	1.8	6.8	23.9	23.9
Cycle Q Clear(g_c), s	4.0	3.6	0.3	6.0	13.4	4.5	2.8	15.7	1.8	6.8	23.9	23.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	376	1143	489	549	1124	481	237	931	407	313	489	479
V/C Ratio(X)	0.28	0.15	0.01	0.28	0.50	0.19	0.28	0.64	0.09	0.50	0.86	0.86
Avail Cap(c_a), veh/h	398	1143	489	580	1124	481	306	1039	454	359	519	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	22.8	21.7	17.7	26.5	23.5	24.0	31.7	26.7	23.1	33.4	33.5
Incr Delay (d2), s/veh	0.4	0.3	0.1	0.3	1.6	0.9	0.6	1.8	0.2	1.2	14.8	15.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.4	0.1	2.2	5.5	1.6	1.1	6.5	0.6	2.6	11.5	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.2	23.1	21.8	18.0	28.1	24.3	24.7	33.4	26.8	24.3	48.3	48.7
LnGrp LOS	B	C	C	B	C	C	C	C	C	C	D	D
Approach Vol, veh/h		284			804			700			990	
Approach Delay, s/veh		21.2			25.7			32.3			44.7	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	39.1	14.1	32.8	14.6	38.6	12.6	34.2				
Change Period (Y+Rc), s	4.2	4.9	4.2	4.9	4.2	4.9	4.2	4.9				
Max Green Setting (Gmax), s	11.8	26.1	12.8	31.1	11.8	26.1	12.8	31.1				
Max Q Clear Time (g_c+I1), s	8.0	5.6	8.8	17.7	6.0	15.4	4.8	25.9				
Green Ext Time (p_c), s	0.1	1.8	0.1	5.6	0.1	4.8	0.1	3.4				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			33.7									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary  
4: Holliston Ave & Green St

Future Baseline Conditions (2027)  
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 				
Traffic Volume (veh/h)	34	191	70	0	0	0	0	54	29	13	88	0
Future Volume (veh/h)	34	191	70	0	0	0	0	54	29	13	88	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	0.90	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	40	222	59				0	63	3	15	102	0
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	495	2732	696				0	145	7	57	151	0
Arrive On Green	0.80	0.80	0.80				0.00	0.10	0.10	0.10	0.10	0.00
Sat Flow, veh/h	621	3426	872				0	1498	71	127	1563	0
Grp Volume(v), veh/h	111	102	108				0	0	66	117	0	0
Grp Sat Flow(s),veh/h/ln	1727	1600	1592				0	0	1569	1689	0	0
Q Serve(g_s), s	1.3	1.2	1.3				0.0	0.0	3.6	2.4	0.0	0.0
Cycle Q Clear(g_c), s	1.3	1.2	1.3				0.0	0.0	3.6	6.0	0.0	0.0
Prop In Lane	0.36		0.55				0.00		0.05	0.13		0.00
Lane Grp Cap(c), veh/h	1377	1276	1269				0	0	152	209	0	0
V/C Ratio(X)	0.08	0.08	0.08				0.00	0.00	0.43	0.56	0.00	0.00
Avail Cap(c_a), veh/h	1377	1276	1269				0	0	490	569	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.00	1.00	0.98	0.00	0.00
Uniform Delay (d), s/veh	2.0	2.0	2.0				0.0	0.0	38.3	39.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.1	0.1				0.0	0.0	1.9	2.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.3	0.3				0.0	0.0	1.5	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	2.1	2.1	2.1				0.0	0.0	40.3	41.7	0.0	0.0
LnGrp LOS	A	A	A						D	D		
Approach Vol, veh/h		321						66			117	
Approach Delay, s/veh		2.1						40.3			41.7	
Approach LOS		A						D			D	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		76.7		13.3				13.3				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		52.4		28.1				28.1				
Max Q Clear Time (g_c+I1), s		3.3		5.6				8.0				
Green Ext Time (p_c), s		2.2		0.3				0.6				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			16.3									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
 5: Hill Ave & Green St/Pasadena City College Parking Lot

Future Baseline Conditions (2027)  
 Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	16	62	21	0	35	0	588	43	86	726	0
Future Volume (veh/h)	125	16	62	21	0	35	0	588	43	86	726	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	0	1758	0	1758	1758	1660	1758	0
Adj Flow Rate, veh/h	159	0	49	22	0	37	0	619	45	91	764	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	795	0	362	0	0	0	0	1406	102	397	1489	0
Arrive On Green	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.45	0.45	0.45	0.45	0.00
Sat Flow, veh/h	3162	0	1440		0		0	3244	229	683	3428	0
Grp Volume(v), veh/h	159	0	49		0.0		0	327	337	91	764	0
Grp Sat Flow(s),veh/h/ln	1581	0	1440				0	1670	1715	683	1670	0
Q Serve(g_s), s	1.5	0.0	1.0				0.0	5.3	5.3	4.1	6.4	0.0
Cycle Q Clear(g_c), s	1.5	0.0	1.0				0.0	5.3	5.3	9.4	6.4	0.0
Prop In Lane	1.00		1.00				0.00		0.13	1.00		0.00
Lane Grp Cap(c), veh/h	795	0	362				0	744	764	397	1489	0
V/C Ratio(X)	0.20	0.00	0.14				0.00	0.44	0.44	0.23	0.51	0.00
Avail Cap(c_a), veh/h	2110	0	961				0	1285	1320	618	2571	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.5	0.0	11.3				0.0	7.4	7.5	10.7	7.8	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.2				0.0	0.4	0.4	0.3	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.3				0.0	1.4	1.4	0.5	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.6	0.0	11.5				0.0	7.9	7.9	11.0	8.0	0.0
LnGrp LOS	B		B					A	A	B	A	
Approach Vol, veh/h		208						664			855	
Approach Delay, s/veh		11.6						7.9			8.4	
Approach LOS		B						A			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		21.3		17.7		21.3						
Change Period (Y+Rc), s		3.9		7.9		3.9						
Max Green Setting (Gmax), s		30.0		26.0		30.0						
Max Q Clear Time (g_c+I1), s		7.3		3.5		11.4						
Green Ext Time (p_c), s		4.2		0.7		6.0						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			8.5									
HCM 7th LOS			A									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

HCM 7th Signalized Intersection Summary

Future Baseline Conditions (2027)

6: Hill Ave & Cordova St/Pasadena City College Parking Lot

Timing Plan: AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	16	76	12	10	13	328	466	61	74	502	235
Future Volume (veh/h)	104	16	76	12	10	13	328	466	61	74	502	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.98	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	117	18	5	13	11	2	369	524	60	83	564	207
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	247	250	210	243	205	37	538	2247	256	512	1395	510
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.11	0.74	0.74	0.59	0.59	0.59
Sat Flow, veh/h	1231	1758	1474	1220	1441	262	1581	3019	345	735	2374	869
Grp Volume(v), veh/h	117	18	5	13	0	13	369	289	295	83	396	375
Grp Sat Flow(s),veh/h/ln	1231	1758	1474	1220	0	1703	1581	1670	1694	735	1670	1573
Q Serve(g_s), s	8.2	0.8	0.3	0.8	0.0	0.6	7.7	4.8	4.9	4.7	11.5	11.6
Cycle Q Clear(g_c), s	8.8	0.8	0.3	1.6	0.0	0.6	7.7	4.8	4.9	4.7	11.5	11.6
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.20	1.00		0.55
Lane Grp Cap(c), veh/h	247	250	210	243	0	243	538	1243	1260	512	981	924
V/C Ratio(X)	0.47	0.07	0.02	0.05	0.00	0.05	0.69	0.23	0.23	0.16	0.40	0.41
Avail Cap(c_a), veh/h	429	510	427	423	0	494	570	1243	1260	512	981	924
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.80	0.80	0.80	0.91	0.91	0.91
Uniform Delay (d), s/veh	37.1	33.4	33.2	34.1	0.0	33.3	7.2	3.6	3.6	8.6	10.0	10.0
Incr Delay (d2), s/veh	2.0	0.2	0.1	0.1	0.0	0.1	2.4	0.4	0.3	0.6	1.1	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.4	0.1	0.3	0.0	0.3	2.3	1.3	1.4	0.8	4.2	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.1	33.6	33.3	34.2	0.0	33.4	9.5	3.9	3.9	9.2	11.2	11.2
LnGrp LOS	D	C	C	C		C	A	A	A	A	B	B
Approach Vol, veh/h		140			26			953			854	
Approach Delay, s/veh		38.2			33.8			6.1			11.0	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		71.9		18.1	14.1	57.8		18.1				
Change Period (Y+Rc), s		4.9		5.3	4.2	4.9		5.3				
Max Green Setting (Gmax), s		53.7		26.1	11.7	37.8		26.1				
Max Q Clear Time (g_c+I1), s		6.9		10.8	9.7	13.6		3.6				
Green Ext Time (p_c), s		6.1		0.6	0.2	8.4		0.1				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			10.9									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
7: Hill Ave & Del Mar Blvd

Future Baseline Conditions (2027)  
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	433	24	11	825	246	117	454	30	145	254	192
Future Volume (veh/h)	110	433	24	11	825	246	117	454	30	145	254	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		0.97	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	113	446	22	11	851	81	121	468	27	149	262	75
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	164	1106	54	164	1141	497	295	740	43	345	1021	285
Arrive On Green	0.10	0.34	0.34	0.10	0.34	0.34	0.23	0.23	0.23	0.12	0.40	0.40
Sat Flow, veh/h	1581	3236	159	1581	3340	1453	916	3204	184	1581	2562	716
Grp Volume(v), veh/h	113	230	238	11	851	81	121	243	252	149	169	168
Grp Sat Flow(s),veh/h/ln	1581	1670	1725	1581	1670	1453	916	1670	1718	1581	1670	1608
Q Serve(g_s), s	6.0	9.1	9.1	0.5	19.5	3.4	10.1	11.4	11.4	5.7	5.8	6.1
Cycle Q Clear(g_c), s	6.0	9.1	9.1	0.5	19.5	3.4	10.1	11.4	11.4	5.7	5.8	6.1
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.11	1.00		0.45
Lane Grp Cap(c), veh/h	164	571	589	164	1141	497	295	386	397	345	665	641
V/C Ratio(X)	0.69	0.40	0.40	0.07	0.75	0.16	0.41	0.63	0.63	0.43	0.25	0.26
Avail Cap(c_a), veh/h	268	787	813	268	1574	685	405	586	603	430	665	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.4	21.7	21.8	35.0	25.2	19.9	29.5	30.0	30.0	20.3	17.4	17.5
Incr Delay (d2), s/veh	5.0	0.7	0.6	0.2	1.7	0.2	1.3	2.4	2.4	1.2	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	3.5	3.6	0.2	7.5	1.1	2.3	4.7	4.9	2.1	2.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.5	22.4	22.4	35.2	26.8	20.1	30.8	32.4	32.4	21.5	17.6	17.7
LnGrp LOS	D	C	C	D	C	C	C	C	C	C	B	B
Approach Vol, veh/h		581			943			616			486	
Approach Delay, s/veh		26.3			26.3			32.1			18.8	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	34.1	14.5	24.5	13.5	34.1		39.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	14.7	40.8	14.7	30.4	14.7	40.8		30.4				
Max Q Clear Time (g_c+I1), s	8.0	21.5	7.7	13.4	2.5	11.1		8.1				
Green Ext Time (p_c), s	0.1	8.1	0.3	4.7	0.0	4.1		2.0				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			26.3									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary  
 1: Wilson Ave & Green St

Future Baseline Conditions (2027)  
 Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  										
Traffic Volume (veh/h)	69	538	51	0	0	0	0	249	33	30	163	0
Future Volume (veh/h)	69	538	51	0	0	0	0	249	33	30	163	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	77	598	57				0	277	37	33	181	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	259	2005	190				0	655	534	116	555	0
Arrive On Green	0.49	0.49	0.49				0.00	0.37	0.37	0.37	0.37	0.00
Sat Flow, veh/h	526	4081	386				0	1758	1432	152	1489	0
Grp Volume(v), veh/h	253	233	246				0	277	37	214	0	0
Grp Sat Flow(s),veh/h/ln	1732	1600	1662				0	1758	1432	1641	0	0
Q Serve(g_s), s	6.1	6.1	6.2				0.0	8.2	1.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.1	6.1	6.2				0.0	8.2	1.2	6.1	0.0	0.0
Prop In Lane	0.30		0.23				0.00		1.00	0.15		0.00
Lane Grp Cap(c), veh/h	851	786	817				0	655	534	671	0	0
V/C Ratio(X)	0.30	0.30	0.30				0.00	0.42	0.07	0.32	0.00	0.00
Avail Cap(c_a), veh/h	851	786	817				0	655	534	671	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.6	10.6	10.6				0.0	16.3	14.1	15.7	0.0	0.0
Incr Delay (d2), s/veh	0.9	1.0	0.9				0.0	2.0	0.3	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.2	2.3				0.0	3.5	0.4	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.5	11.6	11.6				0.0	18.3	14.4	16.9	0.0	0.0
LnGrp LOS	B	B	B					B	B	B		
Approach Vol, veh/h		732						314			214	
Approach Delay, s/veh		11.5						17.9			16.9	
Approach LOS		B						B			B	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		39.3		30.7				30.7				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		34.4		26.1				26.1				
Max Q Clear Time (g_c+I1), s		8.2		8.1				10.2				
Green Ext Time (p_c), s		0.9		0.3				0.3				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			14.0									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
 2: Holliston Ave & Colorado Blvd

Future Baseline Conditions (2027)  
 Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	573	32	60	570	3	27	27	85	18	10	9
Future Volume (veh/h)	17	573	32	60	570	3	27	27	85	18	10	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.97		0.90	0.97		0.91	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	0.90
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1758	1758	1758	1758	1758	1758
Adj Flow Rate, veh/h	18	591	28	62	588	2	28	28	68	19	10	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	195	949	45	184	1003	3	204	204	429	450	227	126
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.58	0.58	0.58	0.58	0.58	0.58
Sat Flow, veh/h	713	3227	153	695	3413	12	256	350	735	653	389	216
Grp Volume(v), veh/h	18	305	314	62	288	302	124	0	0	35	0	0
Grp Sat Flow(s),veh/h/ln	713	1670	1709	695	1670	1755	1340	0	0	1258	0	0
Q Serve(g_s), s	1.8	12.6	12.7	6.8	11.8	11.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.5	12.6	12.7	19.5	11.8	11.8	3.2	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.01	0.23		0.55	0.54		0.17
Lane Grp Cap(c), veh/h	195	491	503	184	491	516	837	0	0	803	0	0
V/C Ratio(X)	0.09	0.62	0.62	0.34	0.59	0.59	0.15	0.00	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	200	503	515	189	503	529	837	0	0	803	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	0.91	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.9	24.4	24.4	32.8	24.1	24.1	7.6	0.0	0.0	7.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	2.3	2.3	1.0	1.6	1.5	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.1	5.2	1.2	4.7	4.9	1.0	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.1	26.7	26.7	33.8	25.6	25.6	7.9	0.0	0.0	7.2	0.0	0.0
LnGrp LOS	C	C	C	C	C	C	A			A		
Approach Vol, veh/h		637			652			124				35
Approach Delay, s/veh		26.8			26.4			7.9				7.2
Approach LOS		C			C			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.6		28.4		51.6		28.4				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		46.1		24.1		46.1		24.1				
Max Q Clear Time (g_c+I1), s		5.2		15.5		2.8		21.5				
Green Ext Time (p_c), s		0.8		2.6		0.2		1.1				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				24.5								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary  
 3: Hill Ave & Colorado Blvd

Future Baseline Conditions (2027)  
 Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	462	65	119	424	200	60	653	282	123	348	120
Future Volume (veh/h)	151	462	65	119	424	200	60	653	282	123	348	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.95	0.99		0.95	0.99		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	156	476	19	123	437	111	62	673	136	127	359	89
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	432	1199	510	425	1159	491	338	886	378	273	739	180
Arrive On Green	0.11	0.36	0.36	0.10	0.35	0.35	0.08	0.27	0.27	0.10	0.28	0.28
Sat Flow, veh/h	1581	3340	1421	1581	3340	1415	1581	3340	1427	1581	2636	643
Grp Volume(v), veh/h	156	476	19	123	437	111	62	673	136	127	225	223
Grp Sat Flow(s),veh/h/ln	1581	1670	1421	1581	1670	1415	1581	1670	1427	1581	1670	1609
Q Serve(g_s), s	6.0	10.7	0.9	4.7	9.8	5.6	2.7	18.5	7.7	5.6	11.2	11.6
Cycle Q Clear(g_c), s	6.0	10.7	0.9	4.7	9.8	5.6	2.7	18.5	7.7	5.6	11.2	11.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	432	1199	510	425	1159	491	338	886	378	273	468	451
V/C Ratio(X)	0.36	0.40	0.04	0.29	0.38	0.23	0.18	0.76	0.36	0.47	0.48	0.49
Avail Cap(c_a), veh/h	446	1199	510	458	1159	491	410	1039	444	322	519	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.61	0.61	0.61	1.00	1.00	1.00	0.77	0.77	0.77	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	24.0	20.8	17.3	24.5	23.1	22.7	33.8	29.8	24.3	29.9	30.1
Incr Delay (d2), s/veh	0.3	0.6	0.1	0.4	0.9	1.1	0.2	3.0	0.9	1.2	1.6	1.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.2	0.3	1.7	4.0	2.0	1.0	7.8	2.7	2.1	4.7	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.4	24.6	20.9	17.7	25.5	24.2	22.9	36.8	30.8	25.5	31.6	31.9
LnGrp LOS	B	C	C	B	C	C	C	D	C	C	C	C
Approach Vol, veh/h		651			671			871			575	
Approach Delay, s/veh		22.7			23.8			34.9			30.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.9	40.8	13.9	31.4	15.1	39.6	12.4	32.9				
Change Period (Y+Rc), s	4.2	4.9	4.2	4.9	4.2	4.9	4.2	4.9				
Max Green Setting (Gmax), s	11.8	26.1	12.8	31.1	11.8	26.1	12.8	31.1				
Max Q Clear Time (g_c+I1), s	6.7	12.7	7.6	20.5	8.0	11.8	4.7	13.6				
Green Ext Time (p_c), s	0.1	4.4	0.1	5.8	0.1	4.8	0.1	4.5				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			28.4									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary  
4: Holliston Ave & Green St

Future Baseline Conditions (2027)  
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 				
Traffic Volume (veh/h)	59	526	40	0	0	0	0	54	28	18	65	0
Future Volume (veh/h)	59	526	40	0	0	0	0	54	28	18	65	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99				1.00		0.96	0.97		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	0.90	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	61	542	35				0	56	5	19	67	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	385	3418	220				0	137	12	70	133	0
Arrive On Green	0.80	0.80	0.80				0.00	0.10	0.10	0.10	0.10	0.00
Sat Flow, veh/h	482	4281	275				0	1426	127	218	1389	0
Grp Volume(v), veh/h	219	202	217				0	0	61	86	0	0
Grp Sat Flow(s),veh/h/ln	1734	1600	1705				0	0	1553	1607	0	0
Q Serve(g_s), s	2.6	2.6	2.6				0.0	0.0	3.3	1.3	0.0	0.0
Cycle Q Clear(g_c), s	2.6	2.6	2.6				0.0	0.0	3.3	4.6	0.0	0.0
Prop In Lane	0.28		0.16				0.00		0.08	0.22		0.00
Lane Grp Cap(c), veh/h	1384	1277	1361				0	0	149	203	0	0
V/C Ratio(X)	0.16	0.16	0.16				0.00	0.00	0.41	0.42	0.00	0.00
Avail Cap(c_a), veh/h	1384	1277	1361				0	0	312	372	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96				0.00	0.00	1.00	0.93	0.00	0.00
Uniform Delay (d), s/veh	2.1	2.1	2.1				0.0	0.0	38.3	38.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.2				0.0	0.0	1.8	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.6	0.7				0.0	0.0	1.3	1.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	2.3	2.3	2.3				0.0	0.0	40.1	40.0	0.0	0.0
LnGrp LOS	A	A	A						D	D		
Approach Vol, veh/h		638						61			86	
Approach Delay, s/veh		2.3						40.1			40.0	
Approach LOS		A						D			D	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		76.8		13.2				13.2				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		62.4		18.1				18.1				
Max Q Clear Time (g_c+I1), s		4.6		5.3				6.6				
Green Ext Time (p_c), s		4.7		0.2				0.3				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			9.4									
HCM 7th LOS			A									

HCM 7th Signalized Intersection Summary  
 5: Hill Ave & Green St/Pasadena City College Parking Lot

Future Baseline Conditions (2027)  
 Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	6	208	66	0	55	0	685	28	18	538	0
Future Volume (veh/h)	280	6	208	66	0	55	0	685	28	18	538	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	0	1758	0	1758	1758	1660	1758	0
Adj Flow Rate, veh/h	377	0	153	72	0	60	0	745	30	20	585	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	950	0	434	0	0	0	0	1244	50	316	1272	0
Arrive On Green	0.30	0.00	0.30	0.00	0.00	0.00	0.00	0.38	0.38	0.38	0.38	0.00
Sat Flow, veh/h	3162	0	1445		0		0	3355	131	616	3428	0
Grp Volume(v), veh/h	377	0	153		0.0		0	381	394	20	585	0
Grp Sat Flow(s),veh/h/ln	1581	0	1445				0	1670	1728	616	1670	0
Q Serve(g_s), s	3.5	0.0	3.1				0.0	6.8	6.8	1.0	4.9	0.0
Cycle Q Clear(g_c), s	3.5	0.0	3.1				0.0	6.8	6.8	7.8	4.9	0.0
Prop In Lane	1.00		1.00				0.00		0.08	1.00		0.00
Lane Grp Cap(c), veh/h	950	0	434				0	636	658	316	1272	0
V/C Ratio(X)	0.40	0.00	0.35				0.00	0.60	0.60	0.06	0.46	0.00
Avail Cap(c_a), veh/h	2220	0	1015				0	1353	1400	581	2706	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.3	0.0	10.1				0.0	9.2	9.2	12.3	8.6	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.5				0.0	0.9	0.9	0.1	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.8				0.0	1.9	1.9	0.1	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.6	0.0	10.6				0.0	10.1	10.1	12.4	8.9	0.0
LnGrp LOS	B		B					B	B	B	A	
Approach Vol, veh/h		530						775			605	
Approach Delay, s/veh		10.6						10.1			9.0	
Approach LOS		B						B			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		18.0		19.0		18.0						
Change Period (Y+Rc), s		3.9		7.9		3.9						
Max Green Setting (Gmax), s		30.0		26.0		30.0						
Max Q Clear Time (g_c+I1), s		8.8		5.5		9.8						
Green Ext Time (p_c), s		5.0		1.9		4.1						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			9.9									
HCM 7th LOS			A									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

HCM 7th Signalized Intersection Summary

Future Baseline Conditions (2027)

6: Hill Ave & Cordova St/Pasadena City College Parking Lot

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	8	169	83	34	123	115	426	14	15	588	160
Future Volume (veh/h)	110	8	169	83	34	123	115	426	14	15	588	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	118	9	22	89	37	16	124	458	13	16	632	149
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	229	267	226	260	177	76	518	2437	69	565	1590	374
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.10	0.73	0.73	0.59	0.59	0.59
Sat Flow, veh/h	1199	1758	1490	1224	1164	503	1581	3317	94	819	2683	631
Grp Volume(v), veh/h	118	9	22	89	0	53	124	230	241	16	393	388
Grp Sat Flow(s),veh/h/ln	1199	1758	1490	1224	0	1667	1581	1670	1741	819	1670	1644
Q Serve(g_s), s	8.6	0.4	1.1	6.0	0.0	2.5	2.2	3.8	3.8	0.7	11.3	11.3
Cycle Q Clear(g_c), s	11.1	0.4	1.1	6.4	0.0	2.5	2.2	3.8	3.8	0.7	11.3	11.3
Prop In Lane	1.00		1.00	1.00		0.30	1.00		0.05	1.00		0.38
Lane Grp Cap(c), veh/h	229	267	226	260	0	253	518	1227	1279	565	990	974
V/C Ratio(X)	0.52	0.03	0.10	0.34	0.00	0.21	0.24	0.19	0.19	0.03	0.40	0.40
Avail Cap(c_a), veh/h	394	510	432	429	0	484	572	1227	1279	565	990	974
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.88	0.88	0.88	0.89	0.89	0.89
Uniform Delay (d), s/veh	38.3	32.5	32.9	35.3	0.0	33.4	5.3	3.7	3.7	7.6	9.8	9.8
Incr Delay (d2), s/veh	2.6	0.1	0.3	0.8	0.0	0.4	0.2	0.3	0.3	0.1	1.1	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.2	0.4	1.8	0.0	1.0	0.6	1.1	1.1	0.1	4.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.8	32.6	33.1	36.0	0.0	33.8	5.5	4.0	4.0	7.7	10.8	10.9
LnGrp LOS	D	C	C	D		C	A	A	A	A	B	B
Approach Vol, veh/h		149			142			595			797	
Approach Delay, s/veh		39.2			35.2			4.3			10.8	
Approach LOS		D			D			A			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		71.0		19.0	12.8	58.2		19.0				
Change Period (Y+Rc), s		4.9		5.3	4.2	4.9		5.3				
Max Green Setting (Gmax), s		53.7		26.1	11.7	37.8		26.1				
Max Q Clear Time (g_c+I1), s		5.8		13.1	4.2	13.3		8.4				
Green Ext Time (p_c), s		4.6		0.6	0.1	7.7		0.5				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			13.1									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
7: Hill Ave & Del Mar Blvd

Future Baseline Conditions (2027)  
Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	878	28	44	500	199	39	240	35	417	342	132
Future Volume (veh/h)	103	878	28	44	500	199	39	240	35	417	342	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.98		0.95	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	112	954	28	48	543	62	42	261	26	453	372	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	152	1183	35	152	1194	515	234	599	59	440	1031	284
Arrive On Green	0.10	0.36	0.36	0.10	0.36	0.36	0.20	0.20	0.20	0.16	0.40	0.40
Sat Flow, veh/h	1581	3309	97	1581	3340	1440	798	3054	301	1581	2566	707
Grp Volume(v), veh/h	112	481	501	48	543	62	42	141	146	453	240	236
Grp Sat Flow(s),veh/h/ln	1581	1670	1736	1581	1670	1440	798	1670	1684	1581	1670	1603
Q Serve(g_s), s	6.4	24.3	24.3	2.6	11.7	2.7	4.2	6.9	7.1	14.7	9.4	9.6
Cycle Q Clear(g_c), s	6.4	24.3	24.3	2.6	11.7	2.7	4.2	6.9	7.1	14.7	9.4	9.6
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.18	1.00		0.44
Lane Grp Cap(c), veh/h	152	597	621	152	1194	515	234	328	331	440	671	644
V/C Ratio(X)	0.74	0.81	0.81	0.32	0.45	0.12	0.18	0.43	0.44	1.03	0.36	0.37
Avail Cap(c_a), veh/h	249	729	758	249	1458	629	337	543	548	440	671	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	27.1	27.1	39.4	23.0	20.2	31.9	33.0	33.0	29.6	19.5	19.6
Incr Delay (d2), s/veh	6.7	6.2	6.0	1.2	0.4	0.1	0.5	1.3	1.3	50.6	0.3	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	10.2	10.6	1.1	4.5	0.9	0.8	2.9	3.0	9.9	3.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.8	33.3	33.1	40.5	23.4	20.3	32.4	34.3	34.4	80.3	19.9	20.0
LnGrp LOS	D	C	C	D	C	C	C	C	C	F	B	B
Approach Vol, veh/h		1094			653			329			929	
Approach Delay, s/veh		34.7			24.4			34.1			49.3	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	37.9	19.2	22.8	13.5	37.9		42.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	14.7	40.8	14.7	30.4	14.7	40.8		30.4				
Max Q Clear Time (g_c+I1), s	8.4	13.7	16.7	9.1	4.6	26.3		11.6				
Green Ext Time (p_c), s	0.1	5.7	0.0	2.6	0.0	7.1		2.8				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh											36.9	
HCM 7th LOS											D	

HCM 7th Signalized Intersection Summary

Future Plus Project Conditions (2027)

1: Wilson Ave & Green St

Timing Plan: AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕↕						↑	↗		↖	
Traffic Volume (veh/h)	19	215	49	0	0	0	0	189	53	46	246	0
Future Volume (veh/h)	19	215	49	0	0	0	0	189	53	46	246	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.95				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	20	226	52				0	199	56	48	259	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	160	1789	389				0	681	573	121	577	0
Arrive On Green	0.48	0.48	0.48				0.00	0.39	0.39	0.39	0.39	0.00
Sat Flow, veh/h	336	3749	815				0	1758	1480	160	1491	0
Grp Volume(v), veh/h	104	95	99				0	199	56	307	0	0
Grp Sat Flow(s),veh/h/ln	1741	1600	1559				0	1758	1480	1651	0	0
Q Serve(g_s), s	2.3	2.3	2.5				0.0	5.5	1.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.3	2.3	2.5				0.0	5.5	1.7	9.1	0.0	0.0
Prop In Lane	0.19		0.52				0.00		1.00	0.16		0.00
Lane Grp Cap(c), veh/h	831	763	744				0	681	573	699	0	0
V/C Ratio(X)	0.12	0.12	0.13				0.00	0.29	0.10	0.44	0.00	0.00
Avail Cap(c_a), veh/h	831	763	744				0	681	573	699	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.2	10.2	10.2				0.0	14.8	13.7	15.9	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.3	0.4				0.0	1.1	0.3	2.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.8	0.9				0.0	2.3	0.6	3.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.5	10.5	10.6				0.0	15.9	14.0	17.9	0.0	0.0
LnGrp LOS	B	B	B					B	B	B		
Approach Vol, veh/h		298						255			307	
Approach Delay, s/veh		10.5						15.5			17.9	
Approach LOS		B						B			B	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		38.3		31.7				31.7				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		33.4		27.1				27.1				
Max Q Clear Time (g_c+I1), s		4.5		11.1				7.5				
Green Ext Time (p_c), s		0.4		0.4				0.2				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			14.6									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
2: Holliston Ave & Colorado Blvd

Future Plus Project Conditions (2027)  
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	245	27	78	614	3	14	10	50	4	14	3
Future Volume (veh/h)	6	245	27	78	614	3	14	10	50	4	14	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.94	0.98		0.96	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	0.90
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1758	1758	1758	1758	1758	1758
Adj Flow Rate, veh/h	6	255	17	81	640	2	15	10	31	4	15	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	148	809	54	272	873	3	252	173	456	196	683	87
Arrive On Green	0.26	0.26	0.26	0.26	0.25	0.26	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	692	3165	209	961	3415	11	313	278	733	229	1099	140
Grp Volume(v), veh/h	6	134	138	81	313	329	56	0	0	21	0	0
Grp Sat Flow(s),veh/h/ln	692	1670	1705	961	1670	1755	1324	0	0	1468	0	0
Q Serve(g_s), s	0.6	5.2	5.3	6.0	13.7	13.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.4	5.2	5.3	11.2	13.7	13.8	1.2	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.01	0.27		0.55	0.19		0.10
Lane Grp Cap(c), veh/h	148	427	436	272	427	449	881	0	0	966	0	0
V/C Ratio(X)	0.04	0.31	0.32	0.30	0.73	0.73	0.06	0.00	0.00	0.02	0.00	0.00
Avail Cap(c_a), veh/h	180	503	514	316	503	529	881	0	0	966	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.86	0.86	0.86	0.92	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	33.9	24.1	24.1	28.7	27.4	27.4	6.0	0.0	0.0	5.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.4	0.4	0.5	3.9	3.7	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.0	2.1	1.4	5.7	6.0	0.4	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.0	24.5	24.5	29.2	31.3	31.1	6.1	0.0	0.0	5.8	0.0	0.0
LnGrp LOS	C	C	C	C	C	C	A			A		
Approach Vol, veh/h		278			723			56			21	
Approach Delay, s/veh		24.7			31.0			6.1			5.8	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.6		25.4		54.6		25.4				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		46.1		24.1		46.1		24.1				
Max Q Clear Time (g_c+I1), s		3.2		16.4		2.4		15.8				
Green Ext Time (p_c), s		0.3		0.9		0.1		2.8				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				27.6								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary  
 3: Hill Ave & Colorado Blvd

Future Plus Project Conditions (2027)  
 Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	162	24	151	529	161	65	566	114	146	662	163
Future Volume (veh/h)	99	162	24	151	529	161	65	566	114	146	662	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.96	0.98		0.96	1.00		0.98	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	105	172	7	161	563	89	69	602	38	155	704	153
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	372	1126	482	544	1109	474	235	946	414	316	804	175
Arrive On Green	0.10	0.34	0.34	0.10	0.33	0.33	0.09	0.28	0.28	0.10	0.30	0.30
Sat Flow, veh/h	1581	3340	1428	1581	3340	1428	1581	3340	1461	1581	2711	589
Grp Volume(v), veh/h	105	172	7	161	563	89	69	602	38	155	433	424
Grp Sat Flow(s),veh/h/ln	1581	1670	1428	1581	1670	1428	1581	1670	1461	1581	1670	1630
Q Serve(g_s), s	4.0	3.6	0.3	6.5	13.5	4.4	2.9	15.8	1.9	6.7	24.7	24.7
Cycle Q Clear(g_c), s	4.0	3.6	0.3	6.5	13.5	4.4	2.9	15.8	1.9	6.7	24.7	24.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	372	1126	482	544	1109	474	235	946	414	316	495	483
V/C Ratio(X)	0.28	0.15	0.01	0.30	0.51	0.19	0.29	0.64	0.09	0.49	0.88	0.88
Avail Cap(c_a), veh/h	394	1126	482	574	1109	474	303	1039	454	362	519	507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	23.2	22.1	18.1	26.8	23.8	23.9	31.3	26.4	22.8	33.4	33.4
Incr Delay (d2), s/veh	0.4	0.3	0.1	0.3	1.7	0.9	0.6	1.7	0.2	1.2	16.2	16.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.4	0.1	2.4	5.6	1.6	1.1	6.5	0.7	2.5	12.0	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.5	23.4	22.1	18.4	28.5	24.7	24.6	33.0	26.6	24.0	49.7	50.1
LnGrp LOS	B	C	C	B	C	C	C	C	C	C	D	D
Approach Vol, veh/h		284			813			709			1012	
Approach Delay, s/veh		21.6			26.1			31.9			45.9	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.1	38.6	14.1	33.2	14.6	38.1	12.7	34.6				
Change Period (Y+Rc), s	4.2	4.9	4.2	4.9	4.2	4.9	4.2	4.9				
Max Green Setting (Gmax), s	11.8	26.1	12.8	31.1	11.8	26.1	12.8	31.1				
Max Q Clear Time (g_c+I1), s	8.5	5.6	8.7	17.8	6.0	15.5	4.9	26.7				
Green Ext Time (p_c), s	0.1	1.8	0.1	5.7	0.1	4.8	0.1	3.0				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			34.2									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary  
 4: Holliston Ave & Green St

Future Plus Project Conditions (2027)  
 Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 				
Traffic Volume (veh/h)	34	191	90	0	0	0	0	54	29	13	106	0
Future Volume (veh/h)	34	191	90	0	0	0	0	54	29	13	106	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	0.90	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	40	222	82				0	63	3	15	123	0
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	453	2505	872				0	163	8	56	175	0
Arrive On Green	0.79	0.79	0.79				0.00	0.11	0.11	0.11	0.11	0.00
Sat Flow, veh/h	577	3188	1110				0	1498	71	105	1610	0
Grp Volume(v), veh/h	120	110	114				0	0	66	138	0	0
Grp Sat Flow(s),veh/h/ln	1729	1600	1546				0	0	1569	1715	0	0
Q Serve(g_s), s	1.4	1.4	1.5				0.0	0.0	3.5	2.8	0.0	0.0
Cycle Q Clear(g_c), s	1.4	1.4	1.5				0.0	0.0	3.5	7.0	0.0	0.0
Prop In Lane	0.33		0.72				0.00		0.05	0.11		0.00
Lane Grp Cap(c), veh/h	1359	1257	1215				0	0	171	231	0	0
V/C Ratio(X)	0.09	0.09	0.09				0.00	0.00	0.39	0.60	0.00	0.00
Avail Cap(c_a), veh/h	1359	1257	1215				0	0	490	573	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	0.00	1.00	0.97	0.00	0.00
Uniform Delay (d), s/veh	2.2	2.2	2.2				0.0	0.0	37.3	38.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.1	0.2				0.0	0.0	1.4	2.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.4	0.4				0.0	0.0	1.4	3.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	2.3	2.4	2.4				0.0	0.0	38.7	41.2	0.0	0.0
LnGrp LOS	A	A	A						D	D		
Approach Vol, veh/h		344						66			138	
Approach Delay, s/veh		2.4						38.7			41.2	
Approach LOS		A						D			D	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		75.6		14.4				14.4				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		52.4		28.1				28.1				
Max Q Clear Time (g_c+I1), s		3.5		5.5				9.0				
Green Ext Time (p_c), s		2.4		0.3				0.7				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			16.5									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
 5: Hill Ave & Green St/Pasadena City College Parking Lot

Future Plus Project Conditions (2027)  
 Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	16	71	21	0	35	0	588	43	86	747	0
Future Volume (veh/h)	133	16	71	21	0	35	0	588	43	86	747	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	0	1758	0	1758	1758	1660	1758	0
Adj Flow Rate, veh/h	170	0	56	22	0	37	0	619	45	91	786	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	803	0	365	0	0	0	0	1410	102	396	1493	0
Arrive On Green	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.45	0.45	0.45	0.45	0.00
Sat Flow, veh/h	3162	0	1440		0		0	3244	229	683	3428	0
Grp Volume(v), veh/h	170	0	56		0.0		0	327	337	91	786	0
Grp Sat Flow(s),veh/h/ln	1581	0	1440				0	1670	1715	683	1670	0
Q Serve(g_s), s	1.7	0.0	1.2				0.0	5.3	5.3	4.2	6.7	0.0
Cycle Q Clear(g_c), s	1.7	0.0	1.2				0.0	5.3	5.3	9.5	6.7	0.0
Prop In Lane	1.00		1.00				0.00		0.13	1.00		0.00
Lane Grp Cap(c), veh/h	803	0	365				0	746	766	396	1493	0
V/C Ratio(X)	0.21	0.00	0.15				0.00	0.44	0.44	0.23	0.53	0.00
Avail Cap(c_a), veh/h	2086	0	949				0	1271	1305	610	2542	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.6	0.0	11.4				0.0	7.5	7.5	10.8	7.9	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.2				0.0	0.4	0.4	0.3	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.3				0.0	1.4	1.4	0.5	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.7	0.0	11.6				0.0	7.9	7.9	11.1	8.2	0.0
LnGrp LOS	B		B					A	A	B	A	
Approach Vol, veh/h		226						664			877	
Approach Delay, s/veh		11.7						7.9			8.5	
Approach LOS		B						A			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		21.5		17.9		21.5						
Change Period (Y+Rc), s		3.9		7.9		3.9						
Max Green Setting (Gmax), s		30.0		26.0		30.0						
Max Q Clear Time (g_c+I1), s		7.3		3.7		11.5						
Green Ext Time (p_c), s		4.2		0.7		6.1						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			8.7									
HCM 7th LOS			A									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

HCM 7th Signalized Intersection Summary

Future Plus Project Conditions (2027)

6: Hill Ave & Cordova St/Pasadena City College Parking Lot

Timing Plan: AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	16	76	12	10	13	340	466	61	74	508	259
Future Volume (veh/h)	104	16	76	12	10	13	340	466	61	74	508	259
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.98	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	117	18	5	13	11	2	382	524	60	83	571	234
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	247	250	210	243	205	37	527	2247	256	509	1338	547
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.11	0.74	0.74	0.58	0.58	0.58
Sat Flow, veh/h	1231	1758	1474	1220	1441	262	1581	3019	345	735	2291	937
Grp Volume(v), veh/h	117	18	5	13	0	13	382	289	295	83	416	389
Grp Sat Flow(s),veh/h/ln	1231	1758	1474	1220	0	1703	1581	1670	1694	735	1670	1558
Q Serve(g_s), s	8.2	0.8	0.3	0.8	0.0	0.6	8.0	4.8	4.9	4.8	12.4	12.5
Cycle Q Clear(g_c), s	8.8	0.8	0.3	1.6	0.0	0.6	8.0	4.8	4.9	4.8	12.4	12.5
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.20	1.00		0.60
Lane Grp Cap(c), veh/h	247	250	210	243	0	243	527	1243	1260	509	975	910
V/C Ratio(X)	0.47	0.07	0.02	0.05	0.00	0.05	0.73	0.23	0.23	0.16	0.43	0.43
Avail Cap(c_a), veh/h	429	510	427	423	0	494	553	1243	1260	509	975	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.79	0.79	0.79	0.91	0.91	0.91
Uniform Delay (d), s/veh	37.1	33.4	33.2	34.1	0.0	33.3	7.9	3.6	3.6	8.8	10.4	10.4
Incr Delay (d2), s/veh	2.0	0.2	0.1	0.1	0.0	0.1	3.3	0.3	0.3	0.6	1.2	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.4	0.1	0.3	0.0	0.3	2.5	1.3	1.4	0.8	4.5	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.1	33.6	33.3	34.2	0.0	33.4	11.2	3.9	3.9	9.4	11.6	11.7
LnGrp LOS	D	C	C	C		C	B	A	A	A	B	B
Approach Vol, veh/h		140			26			966			888	
Approach Delay, s/veh		38.2			33.8			6.8			11.5	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		71.9		18.1	14.4	57.5		18.1				
Change Period (Y+Rc), s		4.9		5.3	4.2	4.9		5.3				
Max Green Setting (Gmax), s		53.7		26.1	11.7	37.8		26.1				
Max Q Clear Time (g_c+I1), s		6.9		10.8	10.0	14.5		3.6				
Green Ext Time (p_c), s		6.1		0.6	0.2	8.7		0.1				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				11.4								
HCM 7th LOS				B								

HCM 7th Signalized Intersection Summary  
7: Hill Ave & Del Mar Blvd

Future Plus Project Conditions (2027)  
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	433	24	11	829	246	121	466	30	146	257	194
Future Volume (veh/h)	110	433	24	11	829	246	121	466	30	146	257	194
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		0.97	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	113	446	22	11	855	80	125	480	27	151	265	79
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	163	1107	54	163	1142	497	295	748	42	341	1014	295
Arrive On Green	0.10	0.34	0.34	0.10	0.34	0.34	0.23	0.23	0.23	0.11	0.40	0.40
Sat Flow, veh/h	1581	3236	159	1581	3340	1453	911	3209	180	1581	2536	738
Grp Volume(v), veh/h	113	230	238	11	855	80	125	249	258	151	172	172
Grp Sat Flow(s),veh/h/ln	1581	1670	1725	1581	1670	1453	911	1670	1719	1581	1670	1604
Q Serve(g_s), s	6.0	9.1	9.2	0.5	19.7	3.3	10.6	11.7	11.8	5.8	6.0	6.3
Cycle Q Clear(g_c), s	6.0	9.1	9.2	0.5	19.7	3.3	10.6	11.7	11.8	5.8	6.0	6.3
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.10	1.00		0.46
Lane Grp Cap(c), veh/h	163	571	590	163	1142	497	295	390	401	341	667	641
V/C Ratio(X)	0.69	0.40	0.40	0.07	0.75	0.16	0.42	0.64	0.64	0.44	0.26	0.27
Avail Cap(c_a), veh/h	267	782	808	267	1564	680	400	583	600	427	667	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	21.9	21.9	35.3	25.3	20.0	29.7	30.1	30.1	20.4	17.5	17.6
Incr Delay (d2), s/veh	5.2	0.7	0.6	0.2	1.7	0.2	1.4	2.5	2.5	1.3	0.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	3.5	3.7	0.2	7.6	1.1	2.4	4.9	5.0	2.2	2.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.9	22.5	22.5	35.4	27.1	20.2	31.1	32.6	32.6	21.7	17.7	17.8
LnGrp LOS	D	C	C	D	C	C	C	C	C	C	B	B
Approach Vol, veh/h		581			946			632			495	
Approach Delay, s/veh		26.5			26.6			32.3			19.0	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	34.3	14.5	24.8	13.5	34.3		39.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	14.7	40.8	14.7	30.4	14.7	40.8		30.4				
Max Q Clear Time (g_c+I1), s	8.0	21.7	7.8	13.8	2.5	11.2		8.3				
Green Ext Time (p_c), s	0.1	8.1	0.3	4.8	0.0	4.1		2.0				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			26.5									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary  
 1: Wilson Ave & Green St

Future Plus Project Conditions (2027)  
 Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  							 			
Traffic Volume (veh/h)	69	540	51	0	0	0	0	249	34	31	163	0
Future Volume (veh/h)	69	540	51	0	0	0	0	249	34	31	163	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.94				1.00		0.96	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	77	600	57				0	277	38	34	181	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	258	2007	189				0	655	534	118	551	0
Arrive On Green	0.49	0.49	0.49				0.00	0.37	0.37	0.37	0.37	0.00
Sat Flow, veh/h	525	4084	385				0	1758	1432	157	1479	0
Grp Volume(v), veh/h	254	234	246				0	277	38	215	0	0
Grp Sat Flow(s),veh/h/ln	1732	1600	1662				0	1758	1432	1636	0	0
Q Serve(g_s), s	6.1	6.1	6.2				0.0	8.2	1.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.1	6.1	6.2				0.0	8.2	1.2	6.1	0.0	0.0
Prop In Lane	0.30		0.23				0.00		1.00	0.16		0.00
Lane Grp Cap(c), veh/h	851	786	817				0	655	534	670	0	0
V/C Ratio(X)	0.30	0.30	0.30				0.00	0.42	0.07	0.32	0.00	0.00
Avail Cap(c_a), veh/h	851	786	817				0	655	534	670	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.6	10.6	10.6				0.0	16.3	14.1	15.7	0.0	0.0
Incr Delay (d2), s/veh	0.9	1.0	0.9				0.0	2.0	0.3	1.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.2	2.3				0.0	3.5	0.4	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.5	11.6	11.6				0.0	18.3	14.4	17.0	0.0	0.0
LnGrp LOS	B	B	B					B	B	B		
Approach Vol, veh/h		734						315			215	
Approach Delay, s/veh		11.5						17.9			17.0	
Approach LOS		B						B			B	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		39.3		30.7				30.7				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		34.4		26.1				26.1				
Max Q Clear Time (g_c+I1), s		8.2		8.1				10.2				
Green Ext Time (p_c), s		0.9		0.3				0.3				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			14.0									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
2: Holliston Ave & Colorado Blvd

Future Plus Project Conditions (2027)  
Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	573	33	61	576	7	27	27	85	18	11	9
Future Volume (veh/h)	17	573	33	61	576	7	27	27	85	18	11	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.97		0.90	0.97		0.92	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	0.90
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1758	1758	1758	1758	1758	1758
Adj Flow Rate, veh/h	18	591	29	63	594	6	28	28	68	19	11	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	192	948	46	184	997	10	204	204	428	440	243	123
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.58	0.58	0.58	0.58	0.58	0.58
Sat Flow, veh/h	707	3220	158	695	3384	34	256	350	735	637	417	211
Grp Volume(v), veh/h	18	306	314	63	293	307	124	0	0	36	0	0
Grp Sat Flow(s),veh/h/ln	707	1670	1708	695	1670	1748	1340	0	0	1265	0	0
Q Serve(g_s), s	1.8	12.7	12.7	6.9	12.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.8	12.7	12.7	19.6	12.0	12.0	3.2	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.02	0.23		0.55	0.53		0.17
Lane Grp Cap(c), veh/h	192	492	503	184	492	515	836	0	0	806	0	0
V/C Ratio(X)	0.09	0.62	0.62	0.34	0.60	0.60	0.15	0.00	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	197	503	514	189	503	527	836	0	0	806	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	30.1	24.4	24.4	32.9	24.1	24.2	7.6	0.0	0.0	7.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	2.3	2.3	1.0	1.7	1.6	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.1	5.2	1.2	4.8	5.0	1.0	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.3	26.7	26.7	33.9	25.8	25.8	8.0	0.0	0.0	7.2	0.0	0.0
LnGrp LOS	C	C	C	C	C	C	A			A		
Approach Vol, veh/h		638			663			124				36
Approach Delay, s/veh		26.8			26.6			8.0				7.2
Approach LOS		C			C			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.5		28.5		51.5		28.5				
Change Period (Y+Rc), s		4.9		4.9		4.9		4.9				
Max Green Setting (Gmax), s		46.1		24.1		46.1		24.1				
Max Q Clear Time (g_c+I1), s		5.2		15.8		2.8		21.6				
Green Ext Time (p_c), s		0.8		2.5		0.2		1.0				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				24.6								
HCM 7th LOS				C								

HCM 7th Signalized Intersection Summary  
 3: Hill Ave & Colorado Blvd

Future Plus Project Conditions (2027)  
 Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	462	65	120	424	200	70	672	291	123	350	121
Future Volume (veh/h)	151	462	65	120	424	200	70	672	291	123	350	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.95	0.99		0.95	0.99		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	156	476	19	124	437	111	72	693	145	127	361	91
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	428	1187	505	421	1148	486	342	898	384	270	734	182
Arrive On Green	0.11	0.36	0.36	0.10	0.34	0.34	0.09	0.27	0.27	0.10	0.28	0.28
Sat Flow, veh/h	1581	3340	1420	1581	3340	1414	1581	3340	1427	1581	2626	652
Grp Volume(v), veh/h	156	476	19	124	437	111	72	693	145	127	228	224
Grp Sat Flow(s),veh/h/ln	1581	1670	1420	1581	1670	1414	1581	1670	1427	1581	1670	1607
Q Serve(g_s), s	6.0	10.7	0.9	4.8	9.9	5.6	3.1	19.1	8.3	5.5	11.4	11.7
Cycle Q Clear(g_c), s	6.0	10.7	0.9	4.8	9.9	5.6	3.1	19.1	8.3	5.5	11.4	11.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	428	1187	505	421	1148	486	342	898	384	270	467	449
V/C Ratio(X)	0.36	0.40	0.04	0.29	0.38	0.23	0.21	0.77	0.38	0.47	0.49	0.50
Avail Cap(c_a), veh/h	443	1187	505	455	1148	486	408	1039	444	319	519	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.61	0.61	0.61	1.00	1.00	1.00	0.75	0.75	0.75	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.3	24.2	21.1	17.5	24.8	23.4	22.4	33.7	29.8	24.2	30.1	30.2
Incr Delay (d2), s/veh	0.3	0.6	0.1	0.4	1.0	1.1	0.2	3.2	1.0	1.3	1.7	1.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	4.3	0.3	1.7	4.0	2.0	1.2	8.0	2.9	2.1	4.7	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.6	24.9	21.1	17.9	25.7	24.5	22.6	36.9	30.7	25.5	31.7	32.0
LnGrp LOS	B	C	C	B	C	C	C	D	C	C	C	C
Approach Vol, veh/h		651			672			910			579	
Approach Delay, s/veh		23.0			24.1			34.8			30.5	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.9	40.4	13.9	31.8	15.1	39.3	12.8	32.8				
Change Period (Y+Rc), s	4.2	4.9	4.2	4.9	4.2	4.9	4.2	4.9				
Max Green Setting (Gmax), s	11.8	26.1	12.8	31.1	11.8	26.1	12.8	31.1				
Max Q Clear Time (g_c+I1), s	6.8	12.7	7.5	21.1	8.0	11.9	5.1	13.7				
Green Ext Time (p_c), s	0.1	4.4	0.1	5.7	0.1	4.8	0.1	4.5				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			28.6									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary  
4: Holliston Ave & Green St

Future Plus Project Conditions (2027)  
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 				
Traffic Volume (veh/h)	59	526	44	0	0	0	0	54	28	18	68	0
Future Volume (veh/h)	59	526	44	0	0	0	0	54	28	18	68	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99				1.00		0.96	0.97		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	0.90	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1758	1758	1758				0	1758	1758	1758	1758	0
Adj Flow Rate, veh/h	61	542	39				0	56	5	19	70	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	382	3392	243				0	137	12	69	135	0
Arrive On Green	0.80	0.80	0.80				0.00	0.10	0.10	0.10	0.10	0.00
Sat Flow, veh/h	479	4250	304				0	1426	127	212	1401	0
Grp Volume(v), veh/h	221	203	218				0	0	61	89	0	0
Grp Sat Flow(s),veh/h/ln	1734	1600	1699				0	0	1554	1613	0	0
Q Serve(g_s), s	2.7	2.6	2.7				0.0	0.0	3.3	1.4	0.0	0.0
Cycle Q Clear(g_c), s	2.7	2.6	2.7				0.0	0.0	3.3	4.7	0.0	0.0
Prop In Lane	0.28		0.18				0.00		0.08	0.21		0.00
Lane Grp Cap(c), veh/h	1384	1277	1356				0	0	150	204	0	0
V/C Ratio(X)	0.16	0.16	0.16				0.00	0.00	0.41	0.44	0.00	0.00
Avail Cap(c_a), veh/h	1384	1277	1356				0	0	312	373	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96				0.00	0.00	1.00	0.93	0.00	0.00
Uniform Delay (d), s/veh	2.1	2.1	2.1				0.0	0.0	38.2	38.8	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.2				0.0	0.0	1.8	1.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.6	0.7				0.0	0.0	1.3	2.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	2.3	2.4	2.3				0.0	0.0	40.0	40.2	0.0	0.0
LnGrp LOS	A	A	A						D	D		
Approach Vol, veh/h		642						61			89	
Approach Delay, s/veh		2.3						40.0			40.2	
Approach LOS		A						D			D	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		76.7		13.3				13.3				
Change Period (Y+Rc), s		4.9		4.6				4.6				
Max Green Setting (Gmax), s		62.4		18.1				18.1				
Max Q Clear Time (g_c+I1), s		4.7		5.3				6.7				
Green Ext Time (p_c), s		4.7		0.2				0.3				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			9.5									
HCM 7th LOS			A									

HCM 7th Signalized Intersection Summary  
 5: Hill Ave & Green St/Pasadena City College Parking Lot

Future Plus Project Conditions (2027)  
 Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	318	6	247	66	0	55	0	685	28	18	541	0
Future Volume (veh/h)	318	6	247	66	0	55	0	685	28	18	541	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	0	1758	0	1758	1758	1660	1758	0
Adj Flow Rate, veh/h	432	0	181	72	0	60	0	745	30	20	588	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	0	3	0	3	3	3	3	0
Cap, veh/h	951	0	435	0	0	0	0	1244	50	316	1272	0
Arrive On Green	0.30	0.00	0.30	0.00	0.00	0.00	0.00	0.38	0.38	0.38	0.38	0.00
Sat Flow, veh/h	3162	0	1445		0		0	3355	131	616	3428	0
Grp Volume(v), veh/h	432	0	181		0.0		0	381	394	20	588	0
Grp Sat Flow(s),veh/h/ln	1581	0	1445				0	1670	1728	616	1670	0
Q Serve(g_s), s	4.1	0.0	3.7				0.0	6.8	6.8	1.0	4.9	0.0
Cycle Q Clear(g_c), s	4.1	0.0	3.7				0.0	6.8	6.8	7.8	4.9	0.0
Prop In Lane	1.00		1.00				0.00		0.08	1.00		0.00
Lane Grp Cap(c), veh/h	951	0	435				0	636	658	316	1272	0
V/C Ratio(X)	0.45	0.00	0.42				0.00	0.60	0.60	0.06	0.46	0.00
Avail Cap(c_a), veh/h	2219	0	1014				0	1352	1399	580	2704	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.5	0.0	10.4				0.0	9.2	9.2	12.3	8.6	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.6				0.0	0.9	0.9	0.1	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.0				0.0	1.9	1.9	0.1	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	10.8	0.0	11.0				0.0	10.1	10.1	12.4	8.9	0.0
LnGrp LOS	B		B					B	B	B	A	
Approach Vol, veh/h		613						775			608	
Approach Delay, s/veh		10.9						10.1			9.0	
Approach LOS		B						B			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		18.0		19.1		18.0						
Change Period (Y+Rc), s		3.9		7.9		3.9						
Max Green Setting (Gmax), s		30.0		26.0		30.0						
Max Q Clear Time (g_c+I1), s		8.8		6.1		9.8						
Green Ext Time (p_c), s		5.0		2.2		4.2						
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			10.0									
HCM 7th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

HCM 7th Signalized Intersection Summary

Future Plus Project Conditions (2027)

6: Hill Ave & Cordova St/Pasadena City College Parking Lot

Timing Plan: PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	8	169	83	34	123	117	426	14	15	615	175
Future Volume (veh/h)	110	8	169	83	34	123	117	426	14	15	615	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	118	9	22	89	37	16	126	458	13	16	661	163
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	229	267	226	260	177	76	501	2437	69	565	1573	388
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.10	0.73	0.73	0.59	0.59	0.59
Sat Flow, veh/h	1199	1758	1490	1224	1164	503	1581	3317	94	819	2656	654
Grp Volume(v), veh/h	118	9	22	89	0	53	126	230	241	16	415	409
Grp Sat Flow(s),veh/h/ln	1199	1758	1490	1224	0	1667	1581	1670	1741	819	1670	1640
Q Serve(g_s), s	8.6	0.4	1.1	6.0	0.0	2.5	2.3	3.8	3.8	0.7	12.1	12.2
Cycle Q Clear(g_c), s	11.1	0.4	1.1	6.4	0.0	2.5	2.3	3.8	3.8	0.7	12.1	12.2
Prop In Lane	1.00		1.00	1.00		0.30	1.00		0.05	1.00		0.40
Lane Grp Cap(c), veh/h	229	267	226	260	0	253	501	1227	1279	565	989	972
V/C Ratio(X)	0.52	0.03	0.10	0.34	0.00	0.21	0.25	0.19	0.19	0.03	0.42	0.42
Avail Cap(c_a), veh/h	394	510	432	429	0	484	555	1227	1279	565	989	972
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.88	0.88	0.88	0.89	0.89	0.89
Uniform Delay (d), s/veh	38.3	32.5	32.9	35.3	0.0	33.4	5.5	3.7	3.7	7.6	10.0	10.0
Incr Delay (d2), s/veh	2.6	0.1	0.3	0.8	0.0	0.4	0.2	0.3	0.3	0.1	1.2	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.2	0.4	1.8	0.0	1.0	0.6	1.1	1.1	0.1	4.4	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.8	32.6	33.1	36.0	0.0	33.8	5.7	4.0	4.0	7.7	11.1	11.1
LnGrp LOS	D	C	C	D		C	A	A	A	A	B	B
Approach Vol, veh/h		149			142			597			840	
Approach Delay, s/veh		39.2			35.2			4.3			11.1	
Approach LOS		D			D			A			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		71.0		19.0	12.8	58.2		19.0				
Change Period (Y+Rc), s		4.9		5.3	4.2	4.9		5.3				
Max Green Setting (Gmax), s		53.7		26.1	11.7	37.8		26.1				
Max Q Clear Time (g_c+I1), s		5.8		13.1	4.3	14.2		8.4				
Green Ext Time (p_c), s		4.6		0.6	0.1	8.1		0.5				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh			13.2									
HCM 7th LOS			B									

HCM 7th Signalized Intersection Summary  
7: Hill Ave & Del Mar Blvd

Future Plus Project Conditions (2027)  
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	878	28	44	501	199	40	242	35	421	357	140
Future Volume (veh/h)	103	878	28	44	501	199	40	242	35	421	357	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.98		0.95	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1660	1758	1758	1660	1758	1758	1660	1758	1758	1660	1758	1758
Adj Flow Rate, veh/h	112	954	28	48	545	62	43	263	26	458	388	112
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	152	1183	35	152	1194	515	231	601	59	440	1023	291
Arrive On Green	0.10	0.36	0.36	0.10	0.36	0.36	0.20	0.20	0.20	0.16	0.40	0.40
Sat Flow, veh/h	1581	3309	97	1581	3340	1440	781	3056	299	1581	2545	724
Grp Volume(v), veh/h	112	481	501	48	545	62	43	142	147	458	253	247
Grp Sat Flow(s),veh/h/ln	1581	1670	1736	1581	1670	1440	781	1670	1685	1581	1670	1599
Q Serve(g_s), s	6.4	24.3	24.3	2.6	11.7	2.7	4.4	7.0	7.2	14.7	10.0	10.2
Cycle Q Clear(g_c), s	6.4	24.3	24.3	2.6	11.7	2.7	4.4	7.0	7.2	14.7	10.0	10.2
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.18	1.00		0.45
Lane Grp Cap(c), veh/h	152	597	621	152	1194	515	231	328	331	440	671	643
V/C Ratio(X)	0.74	0.81	0.81	0.32	0.46	0.12	0.19	0.43	0.44	1.04	0.38	0.38
Avail Cap(c_a), veh/h	249	729	758	249	1457	628	331	543	548	440	671	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	27.1	27.1	39.4	23.1	20.2	31.9	33.0	33.1	29.6	19.7	19.8
Incr Delay (d2), s/veh	6.7	6.2	6.0	1.2	0.4	0.1	0.5	1.3	1.3	54.3	0.3	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	10.2	10.6	1.1	4.5	0.9	0.9	2.9	3.0	10.3	3.8	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.8	33.3	33.1	40.6	23.5	20.3	32.5	34.3	34.4	83.9	20.1	20.2
LnGrp LOS	D	C	C	D	C	C	C	C	C	F	C	C
Approach Vol, veh/h		1094			655			332			958	
Approach Delay, s/veh		34.7			24.4			34.1			50.6	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	37.9	19.2	22.9	13.5	37.9		42.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	14.7	40.8	14.7	30.4	14.7	40.8		30.4				
Max Q Clear Time (g_c+I1), s	8.4	13.7	16.7	9.2	4.6	26.3		12.2				
Green Ext Time (p_c), s	0.1	5.7	0.0	2.7	0.0	7.1		2.9				
<b>Intersection Summary</b>												
HCM 7th Control Delay, s/veh				37.4								
HCM 7th LOS				D								

# Appendix C.

# Queuing

# Calculation

# Sheets

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Queues  
1: Wilson Ave & Green St

Future Baseline Conditions (2027)  
Timing Plan: AM Peak Hour

	→	↑	↗	↓
Lane Group	EBT	NBT	NBR	SBT
Lane Group Flow (vph)	286	199	52	303
v/c Ratio	0.13	0.29	0.09	0.48
Control Delay (s/veh)	8.5	16.4	4.9	19.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.5	16.4	4.9	19.3
Queue Length 50th (ft)	19	58	0	95
Queue Length 95th (ft)	32	104	19	163
Internal Link Dist (ft)	283	463		342
Turn Bay Length (ft)			75	
Base Capacity (vph)	2197	676	595	631
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.13	0.29	0.09	0.48
<b>Intersection Summary</b>				

Queues  
2: Holliston Ave & Colorado Blvd

Future Baseline Conditions (2027)  
Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	6	277	73	641	77	17
v/c Ratio	0.06	0.32	0.30	0.74	0.08	0.02
Control Delay (s/veh)	21.8	23.1	26.0	32.1	3.7	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.8	23.1	26.0	32.1	3.7	6.5
Queue Length 50th (ft)	2	54	29	150	5	3
Queue Length 95th (ft)	11	84	62	201	22	11
Internal Link Dist (ft)		633		381	399	649
Turn Bay Length (ft)	130		130			
Base Capacity (vph)	118	991	278	1000	948	1013
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.28	0.26	0.64	0.08	0.02
<b>Intersection Summary</b>						

Queues  
3: Hill Ave & Colorado Blvd

Future Baseline Conditions (2027)  
Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	105	172	26	151	563	171	67	598	119	155	856
v/c Ratio	0.30	0.17	0.05	0.31	0.51	0.31	0.28	0.62	0.24	0.50	0.79
Control Delay (s/veh)	19.7	28.0	0.2	19.5	31.4	13.1	17.3	33.3	7.0	21.4	35.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.7	28.0	0.2	19.5	31.4	13.1	17.3	33.3	7.0	21.4	35.1
Queue Length 50th (ft)	40	44	0	59	166	29	22	163	3	54	246
Queue Length 95th (ft)	75	73	0	103	226	86	46	224	43	94	323
Internal Link Dist (ft)		381			304			397			1152
Turn Bay Length (ft)	150		150	140		50	100		100	120	
Base Capacity (vph)	358	1005	504	489	1101	550	287	1046	529	333	1088
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.17	0.05	0.31	0.51	0.31	0.23	0.57	0.22	0.47	0.79

Intersection Summary

Queues  
4: Holliston Ave & Green St

Future Baseline Conditions (2027)  
Timing Plan: AM Peak Hour

	→	↑	↓
Lane Group	EBT	NBT	SBT
Lane Group Flow (vph)	343	97	117
v/c Ratio	0.10	0.43	0.53
Control Delay (s/veh)	2.5	30.0	44.2
Queue Delay	0.0	0.0	0.0
Total Delay (s/veh)	2.5	30.0	44.2
Queue Length 50th (ft)	10	35	63
Queue Length 95th (ft)	22	71	103
Internal Link Dist (ft)	1485	580	399
Turn Bay Length (ft)			
Base Capacity (vph)	3455	487	519
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.10	0.20	0.23
Intersection Summary			

Queues

5: Hill Ave & Green St/Pasadena City College Parking Lot

Future Baseline Conditions (2027)

Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	78	78	58	22	37	664	91	764
v/c Ratio	0.21	0.21	0.15	0.07	0.09	0.40	0.31	0.45
Control Delay (s/veh)	21.8	20.5	7.2	25.2	0.5	12.8	17.4	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.8	20.5	7.2	25.2	0.5	12.8	17.4	13.5
Queue Length 50th (ft)	23	21	0	6	0	85	22	104
Queue Length 95th (ft)	65	64	25	28	0	155	67	185
Internal Link Dist (ft)		380				644		397
Turn Bay Length (ft)							140	
Base Capacity (vph)	870	886	821	352	425	2190	384	2214
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.09	0.07	0.06	0.09	0.30	0.24	0.35

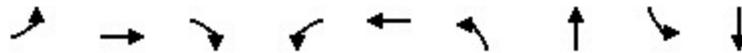
Intersection Summary

Queues

Future Baseline Conditions (2027)

6: Hill Ave & Cordova St/Pasadena City College Parking Lot

Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	117	18	85	13	26	369	593	83	828
v/c Ratio	0.55	0.06	0.26	0.06	0.09	0.72	0.26	0.25	0.55
Control Delay (s/veh)	42.3	27.8	8.5	27.8	17.4	18.7	5.4	18.8	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.0	0.0
Total Delay (s/veh)	42.3	27.8	8.5	27.8	17.4	19.0	5.9	18.8	17.1
Queue Length 50th (ft)	62	9	0	6	5	62	47	28	148
Queue Length 95th (ft)	101	23	33	19	23	#225	100	66	219
Internal Link Dist (ft)		826			139		213		644
Turn Bay Length (ft)	175			50		50		110	
Base Capacity (vph)	352	506	484	355	468	509	2322	329	1518
Starvation Cap Reductn	0	0	0	0	0	9	1268	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.04	0.18	0.04	0.06	0.74	0.56	0.25	0.55

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues  
7: Hill Ave & Del Mar Blvd

Future Baseline Conditions (2027)  
Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	113	471	11	851	254	121	499	149	460
v/c Ratio	0.59	0.39	0.08	0.76	0.39	0.66	0.66	0.48	0.34
Control Delay (s/veh)	58.7	24.6	51.2	35.8	5.3	56.4	40.3	26.7	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.2
Total Delay (s/veh)	58.7	24.6	51.2	35.8	5.3	56.4	40.3	27.4	12.8
Queue Length 50th (ft)	71	113	7	255	0	73	157	65	59
Queue Length 95th (ft)	145	176	27	377	56	152	232	121	106
Internal Link Dist (ft)		848		1556			421		213
Turn Bay Length (ft)	110		130			80		100	
Base Capacity (vph)	238	1452	238	1400	755	249	1035	339	1664
Starvation Cap Reductn	0	0	0	0	0	0	0	51	576
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.32	0.05	0.61	0.34	0.49	0.48	0.52	0.42

Intersection Summary

Queues  
1: Wilson Ave & Green St

Future Baseline Conditions (2027)  
Timing Plan: PM Peak Hour

	→	↑	↘	↓
Lane Group	EBT	NBT	NBR	SBT
Lane Group Flow (vph)	732	277	37	214
v/c Ratio	0.32	0.43	0.07	0.36
Control Delay (s/veh)	10.8	18.9	5.8	18.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.8	18.9	5.8	18.0
Queue Length 50th (ft)	62	87	0	65
Queue Length 95th (ft)	86	148	17	117
Internal Link Dist (ft)	283	463		342
Turn Bay Length (ft)			75	
Base Capacity (vph)	2294	651	551	601
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.32	0.43	0.07	0.36
<b>Intersection Summary</b>				

Queues  
2: Holliston Ave & Colorado Blvd

Future Baseline Conditions (2027)  
Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	18	624	62	591	144	38
v/c Ratio	0.16	0.73	0.60	0.69	0.15	0.04
Control Delay (s/veh)	24.7	31.7	50.6	30.6	5.4	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.7	31.7	50.6	30.6	5.4	6.1
Queue Length 50th (ft)	7	145	27	136	18	5
Queue Length 95th (ft)	24	194	#78	183	44	18
Internal Link Dist (ft)		633		381	399	649
Turn Bay Length (ft)	130		130			
Base Capacity (vph)	135	991	120	999	945	916
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.63	0.52	0.59	0.15	0.04

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Queues  
3: Hill Ave & Colorado Blvd

Future Baseline Conditions (2027)  
Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	156	476	67	123	437	206	62	673	291	127	483
v/c Ratio	0.41	0.47	0.13	0.34	0.44	0.41	0.17	0.69	0.51	0.45	0.45
Control Delay (s/veh)	20.6	30.8	2.0	19.6	30.7	14.2	16.0	35.1	11.3	20.9	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.6	30.8	2.0	19.6	30.7	14.2	16.0	35.1	11.3	20.9	25.1
Queue Length 50th (ft)	57	126	0	44	117	35	22	197	36	47	117
Queue Length 95th (ft)	106	190	10	86	174	104	43	256	109	78	157
Internal Link Dist (ft)		381			304			397			1152
Turn Bay Length (ft)	150		150	140		50	100		100	120	
Base Capacity (vph)	384	1017	507	375	995	506	411	1042	594	312	1115
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.47	0.13	0.33	0.44	0.41	0.15	0.65	0.49	0.41	0.43

Intersection Summary

Queues  
4: Holliston Ave & Green St

Future Baseline Conditions (2027)  
Timing Plan: PM Peak Hour

	→	↑	↓
Lane Group	EBT	NBT	SBT
Lane Group Flow (vph)	644	85	86
v/c Ratio	0.17	0.41	0.44
Control Delay (s/veh)	2.8	31.4	42.5
Queue Delay	0.0	0.0	0.0
Total Delay (s/veh)	2.8	31.4	42.5
Queue Length 50th (ft)	24	32	47
Queue Length 95th (ft)	52	69	84
Internal Link Dist (ft)	1485	580	399
Turn Bay Length (ft)			
Base Capacity (vph)	3788	320	319
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.17	0.27	0.27
Intersection Summary			

Queues

5: Hill Ave & Green St/Pasadena City College Parking Lot

Future Baseline Conditions (2027)

Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	185	183	169	72	60	775	20	585
v/c Ratio	0.48	0.46	0.36	0.27	0.17	0.66	0.15	0.50
Control Delay (s/veh)	25.8	22.2	6.4	30.3	2.0	20.2	18.7	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.8	22.2	6.4	30.3	2.0	20.2	18.7	17.7
Queue Length 50th (ft)	62	52	0	24	0	119	5	84
Queue Length 95th (ft)	137	127	45	73	6	220	23	160
Internal Link Dist (ft)		380				644		397
Turn Bay Length (ft)							140	
Base Capacity (vph)	722	716	736	292	368	1847	215	1858
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.26	0.23	0.25	0.16	0.42	0.09	0.31

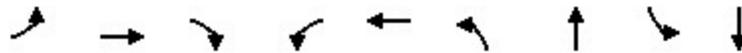
Intersection Summary

Queues

Future Baseline Conditions (2027)

6: Hill Ave & Cordova St/Pasadena City College Parking Lot

Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	118	9	182	89	169	124	473	16	804
v/c Ratio	0.69	0.03	0.43	0.39	0.43	0.29	0.20	0.04	0.45
Control Delay (s/veh)	53.2	26.3	7.6	35.1	11.9	7.0	5.6	12.5	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay (s/veh)	53.2	26.3	7.6	35.1	11.9	7.0	6.1	12.5	13.4
Queue Length 50th (ft)	63	4	0	45	18	19	41	4	124
Queue Length 95th (ft)	110	15	48	80	64	50	82	17	216
Internal Link Dist (ft)		826			139		213		644
Turn Bay Length (ft)	175			50		50		110	
Base Capacity (vph)	268	506	559	359	541	463	2317	437	1792
Starvation Cap Reductn	0	0	0	0	0	0	1328	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.02	0.33	0.25	0.31	0.27	0.48	0.04	0.45

Intersection Summary

Queues  
7: Hill Ave & Del Mar Blvd

Future Baseline Conditions (2027)  
Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	112	984	48	543	216	42	299	453	515
v/c Ratio	0.56	0.80	0.29	0.47	0.34	0.33	0.53	1.20	0.42
Control Delay (s/veh)	52.2	32.4	47.5	26.0	5.0	43.4	38.2	140.8	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2
Total Delay (s/veh)	52.2	32.4	47.5	26.0	5.0	43.4	38.2	141.2	21.0
Queue Length 50th (ft)	63	257	27	126	0	22	83	~254	104
Queue Length 95th (ft)	135	410	70	210	51	59	133	#601	164
Internal Link Dist (ft)		848		1556			421		213
Turn Bay Length (ft)	110		130			80		100	
Base Capacity (vph)	248	1455	248	1463	757	246	1071	377	1709
Starvation Cap Reductn	0	0	0	0	0	0	0	14	485
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.68	0.19	0.37	0.29	0.17	0.28	1.25	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Queues  
1: Wilson Ave & Green St

Future Plus Project Conditions (2027)  
Timing Plan: AM Peak Hour

	→	↑	↗	↓
Lane Group	EBT	NBT	NBR	SBT
Lane Group Flow (vph)	298	199	56	307
v/c Ratio	0.14	0.29	0.09	0.49
Control Delay (s/veh)	8.6	16.4	4.8	19.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.6	16.4	4.8	19.5
Queue Length 50th (ft)	20	58	0	97
Queue Length 95th (ft)	34	104	20	166
Internal Link Dist (ft)	283	463		342
Turn Bay Length (ft)			75	
Base Capacity (vph)	2201	676	597	627
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.29	0.09	0.49
<b>Intersection Summary</b>				

Queues  
2: Holliston Ave & Colorado Blvd

Future Plus Project Conditions (2027)  
Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	6	283	81	643	77	22
v/c Ratio	0.06	0.33	0.34	0.74	0.08	0.02
Control Delay (s/veh)	21.8	22.9	27.0	32.2	3.7	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.8	22.9	27.0	32.2	3.7	6.6
Queue Length 50th (ft)	2	55	32	151	5	3
Queue Length 95th (ft)	11	84	68	202	22	13
Internal Link Dist (ft)		633		381	399	649
Turn Bay Length (ft)	130		130			
Base Capacity (vph)	117	990	275	999	948	1027
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.29	0.29	0.64	0.08	0.02
Intersection Summary						

Queues  
3: Hill Ave & Colorado Blvd

Future Plus Project Conditions (2027)  
Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	105	172	26	161	563	171	69	602	121	155	877
v/c Ratio	0.30	0.17	0.05	0.34	0.52	0.31	0.29	0.62	0.24	0.50	0.80
Control Delay (s/veh)	19.8	28.2	0.2	19.9	31.7	13.2	17.5	33.0	7.2	21.2	35.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	19.8	28.2	0.2	19.9	31.7	13.2	17.5	33.0	7.2	21.2	35.6
Queue Length 50th (ft)	40	45	0	64	166	29	23	164	4	54	255
Queue Length 95th (ft)	75	73	0	109	226	86	47	226	44	94	334
Internal Link Dist (ft)		381			304			397			1152
Turn Bay Length (ft)	150		150	140		50	100		100	120	
Base Capacity (vph)	355	992	499	484	1091	546	283	1055	533	334	1096
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.17	0.05	0.33	0.52	0.31	0.24	0.57	0.23	0.46	0.80

Intersection Summary

Queues  
4: Holliston Ave & Green St

Future Plus Project Conditions (2027)  
Timing Plan: AM Peak Hour

	→	↑	↓
Lane Group	EBT	NBT	SBT
Lane Group Flow (vph)	367	97	138
v/c Ratio	0.11	0.41	0.58
Control Delay (s/veh)	2.5	28.9	45.4
Queue Delay	0.0	0.0	0.0
Total Delay (s/veh)	2.5	28.9	45.4
Queue Length 50th (ft)	11	34	75
Queue Length 95th (ft)	23	71	118
Internal Link Dist (ft)	1485	580	399
Turn Bay Length (ft)			
Base Capacity (vph)	3390	487	523
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.11	0.20	0.26
Intersection Summary			

Queues

Future Plus Project Conditions (2027)

5: Hill Ave & Green St/Pasadena City College Parking Lot

Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	83	82	67	22	37	664	91	786
v/c Ratio	0.23	0.22	0.17	0.07	0.09	0.39	0.31	0.46
Control Delay (s/veh)	22.2	20.7	7.9	25.5	0.5	12.7	17.3	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.2	20.7	7.9	25.5	0.5	12.7	17.3	13.6
Queue Length 50th (ft)	25	23	0	6	0	85	22	108
Queue Length 95th (ft)	68	67	29	28	0	155	67	192
Internal Link Dist (ft)		380				644		397
Turn Bay Length (ft)							140	
Base Capacity (vph)	865	878	817	350	423	2176	381	2199
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.09	0.08	0.06	0.09	0.31	0.24	0.36

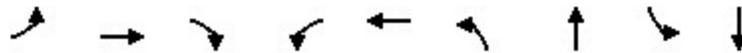
Intersection Summary

Queues

Future Plus Project Conditions (2027)

6: Hill Ave & Cordova St/Pasadena City College Parking Lot

Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	117	18	85	13	26	382	593	83	862
v/c Ratio	0.55	0.06	0.26	0.06	0.09	0.73	0.26	0.27	0.60
Control Delay (s/veh)	42.3	27.8	8.5	27.8	17.4	21.5	5.4	19.8	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.0	0.6	0.0	0.0
Total Delay (s/veh)	42.3	27.8	8.5	27.8	17.4	22.5	5.9	19.8	18.6
Queue Length 50th (ft)	62	9	0	6	5	82	47	30	165
Queue Length 95th (ft)	101	23	33	19	23	#297	100	66	227
Internal Link Dist (ft)		826			139		213		644
Turn Bay Length (ft)	175			50		50		110	
Base Capacity (vph)	352	506	484	355	468	521	2322	308	1436
Starvation Cap Reductn	0	0	0	0	0	31	1268	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.04	0.18	0.04	0.06	0.78	0.56	0.27	0.60

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues  
7: Hill Ave & Del Mar Blvd

Future Plus Project Conditions (2027)  
Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	113	471	11	855	254	125	511	151	465
v/c Ratio	0.59	0.39	0.08	0.77	0.39	0.67	0.66	0.49	0.34
Control Delay (s/veh)	59.6	24.8	51.5	36.4	5.3	56.7	40.3	26.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.3
Total Delay (s/veh)	59.6	24.8	51.5	36.4	5.3	56.7	40.3	27.7	13.0
Queue Length 50th (ft)	73	117	7	265	0	77	164	67	61
Queue Length 95th (ft)	145	176	27	380	56	156	238	122	108
Internal Link Dist (ft)		848		1556			421		213
Turn Bay Length (ft)	110		130			80		100	
Base Capacity (vph)	235	1434	235	1381	748	245	1021	337	1644
Starvation Cap Reductn	0	0	0	0	0	0	0	51	598
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.33	0.05	0.62	0.34	0.51	0.50	0.53	0.44

Intersection Summary

Queues  
1: Wilson Ave & Green St

Future Plus Project Conditions (2027)  
Timing Plan: PM Peak Hour

	→	↑	↗	↓
Lane Group	EBT	NBT	NBR	SBT
Lane Group Flow (vph)	734	277	38	215
v/c Ratio	0.32	0.43	0.07	0.36
Control Delay (s/veh)	10.8	18.9	5.7	18.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.8	18.9	5.7	18.1
Queue Length 50th (ft)	63	87	0	65
Queue Length 95th (ft)	86	148	17	117
Internal Link Dist (ft)	283	463		342
Turn Bay Length (ft)			75	
Base Capacity (vph)	2294	651	552	599
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.32	0.43	0.07	0.36
Intersection Summary				

Queues  
2: Holliston Ave & Colorado Blvd

Future Plus Project Conditions (2027)  
Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	18	625	63	601	144	39
v/c Ratio	0.16	0.73	0.61	0.70	0.15	0.04
Control Delay (s/veh)	24.9	31.8	51.5	31.0	5.4	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.9	31.8	51.5	31.0	5.4	6.1
Queue Length 50th (ft)	7	145	27	140	18	5
Queue Length 95th (ft)	24	194	#80	187	44	18
Internal Link Dist (ft)		633		381	399	649
Turn Bay Length (ft)	130		130			
Base Capacity (vph)	131	991	120	998	945	919
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.63	0.53	0.60	0.15	0.04

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Queues  
3: Hill Ave & Colorado Blvd

Future Plus Project Conditions (2027)  
Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	156	476	67	124	437	206	72	693	300	127	486
v/c Ratio	0.41	0.47	0.13	0.35	0.44	0.41	0.20	0.70	0.52	0.46	0.45
Control Delay (s/veh)	20.7	31.0	2.0	19.8	30.9	14.3	16.2	35.4	12.0	21.0	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.7	31.0	2.0	19.8	30.9	14.3	16.2	35.4	12.0	21.0	25.2
Queue Length 50th (ft)	58	128	0	45	118	35	25	203	40	46	117
Queue Length 95th (ft)	106	190	10	87	174	104	48	266	118	78	160
Internal Link Dist (ft)		381			304			397			1152
Turn Bay Length (ft)	150		150	140		50	100		100	120	
Base Capacity (vph)	382	1011	504	374	989	504	410	1042	594	307	1112
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.47	0.13	0.33	0.44	0.41	0.18	0.67	0.51	0.41	0.44

Intersection Summary

Queues  
4: Holliston Ave & Green St

Future Plus Project Conditions (2027)  
Timing Plan: PM Peak Hour

	→	↑	↓
Lane Group	EBT	NBT	SBT
Lane Group Flow (vph)	648	85	89
v/c Ratio	0.17	0.41	0.45
Control Delay (s/veh)	2.9	31.2	42.7
Queue Delay	0.0	0.0	0.0
Total Delay (s/veh)	2.9	31.2	42.7
Queue Length 50th (ft)	24	32	48
Queue Length 95th (ft)	52	69	86
Internal Link Dist (ft)	1485	580	399
Turn Bay Length (ft)			
Base Capacity (vph)	3782	320	320
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.17	0.27	0.28
Intersection Summary			

Queues

Future Plus Project Conditions (2027)

5: Hill Ave & Green St/Pasadena City College Parking Lot

Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	215	210	196	72	60	775	20	588
v/c Ratio	0.52	0.50	0.38	0.27	0.17	0.67	0.15	0.51
Control Delay (s/veh)	26.2	22.1	6.0	31.8	1.9	21.4	19.9	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.2	22.1	6.0	31.8	1.9	21.4	19.9	18.7
Queue Length 50th (ft)	74	62	0	25	0	128	5	91
Queue Length 95th (ft)	158	143	47	75	6	228	24	166
Internal Link Dist (ft)		380				644		397
Turn Bay Length (ft)							140	
Base Capacity (vph)	701	694	733	283	361	1791	204	1802
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.30	0.27	0.25	0.17	0.43	0.10	0.33

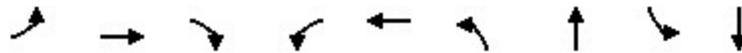
Intersection Summary

Queues

Future Plus Project Conditions (2027)

6: Hill Ave & Cordova St/Pasadena City College Parking Lot

Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	118	9	182	89	169	126	473	16	849
v/c Ratio	0.69	0.03	0.43	0.39	0.43	0.30	0.20	0.04	0.47
Control Delay (s/veh)	53.2	26.3	7.6	35.1	11.9	7.2	5.6	12.5	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay (s/veh)	53.2	26.3	7.6	35.1	11.9	7.2	6.1	12.5	13.7
Queue Length 50th (ft)	63	4	0	45	18	19	41	4	133
Queue Length 95th (ft)	110	15	48	80	64	50	82	17	232
Internal Link Dist (ft)		826			139		213		644
Turn Bay Length (ft)	175			50		50		110	
Base Capacity (vph)	268	506	559	359	541	447	2317	437	1791
Starvation Cap Reductn	0	0	0	0	0	0	1328	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.02	0.33	0.25	0.31	0.28	0.48	0.04	0.47

Intersection Summary

Queues  
7: Hill Ave & Del Mar Blvd

Future Plus Project Conditions (2027)  
Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	112	984	48	545	216	43	301	458	540
v/c Ratio	0.56	0.80	0.29	0.47	0.34	0.35	0.54	1.22	0.44
Control Delay (s/veh)	52.2	32.5	47.6	26.1	5.0	44.1	38.3	146.6	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2
Total Delay (s/veh)	52.2	32.5	47.6	26.1	5.0	44.1	38.3	147.0	21.3
Queue Length 50th (ft)	63	258	27	127	0	23	83	~261	111
Queue Length 95th (ft)	135	410	70	211	51	60	134	#609	173
Internal Link Dist (ft)		848		1556			421		213
Turn Bay Length (ft)	110		130			80		100	
Base Capacity (vph)	248	1454	248	1462	757	240	1070	376	1709
Starvation Cap Reductn	0	0	0	0	0	0	0	14	481
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.68	0.19	0.37	0.29	0.18	0.28	1.27	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.